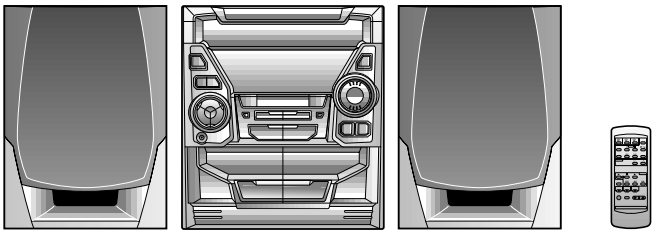
SHARP SERVICE MANUAL

No. S4029CDBA1200



CD-BA1200H

CD-BA1200H Mini Component System consisting of CD-BA1200H (main unit) and CP-BA1200H (speaker system).

COMPACT disc DIGITAL AUDIO

SAVING ENERGY STAND-BY POWER CONSUMPTION 0.6W

- In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified be used.

- **Note for users in U.K.**
  Recording and playback of any material may require consent which SHARP is unable to give. Please refer particularly to the provisions of Copyright Act 1956, the Dramatic and Musical Prefomers Protection Act 1956, the Preformers Protection Acts 1963 and 1972 and to any subsequent statutory enactments and orders.

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SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

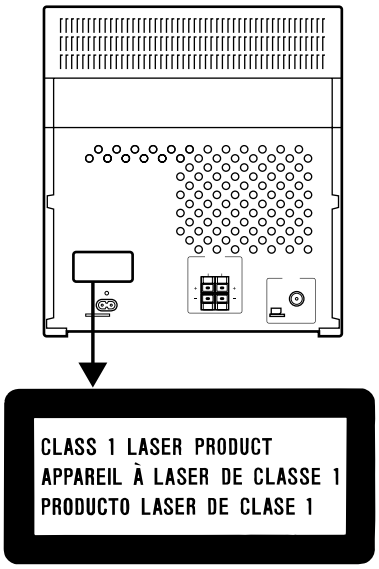
SAFETY PRECAUTION FOR SERVICE MANUAL

Precaution to be taken when replacing and servicing the Laser Pickup.

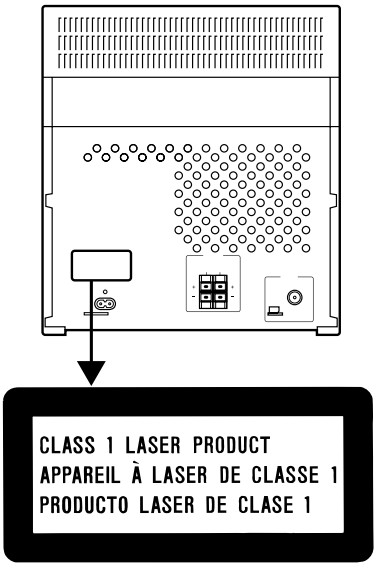
The AEL (Accessible Emission Level) of Laser Power Output for this model is specified to be lower than Class I Requirements. However, the following precautions must be observed during servicing to protect your eyes against exposure to the Laser beam.

(1) When the cabinet has been removed, the power is turned on without a compact disc, and the Pickup is on a position outer than the lead-in position, the Laser will light for several seconds to detect a disc. Do not look into the Pickup Lens.
(2) The Laser Power Output of the Pickup inside the unit and replacement service parts have already been adjusted prior to shipping.
(3) No adjustment to the Laser Power should be attempted when replacing or servicing the Pickup.
(4) Under no circumstances look directly into the Pickup Lens at any time.
(5) CAUTION - Use of controls or adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.

(For U.K.)

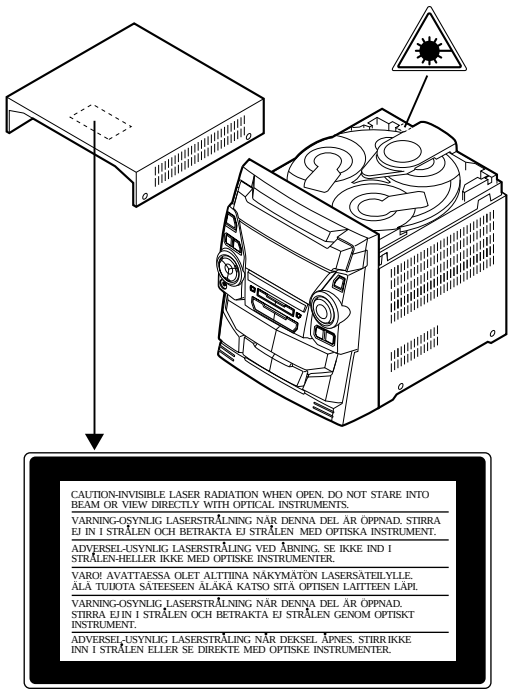


(Except for U.K.)



LASER KLASSE 1
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT
LASER TŘÍDY 1
LASER TRIEDY 1

Laser Diode Properties
Material: GaAlAs
Wavelength: 780 nm
Emission Duration: continuous
Laser Output: max. 0.6 mW


CAUTION-INVISIBLE LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS.
VARNING-OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. STIRRA EJ IN I STRÅLEN OCH BETRAKTA EJ STRÅLEN MED OPTISKA INSTRUMENT.
ADVERSEL-USYNLIG LASERSTRÅLING VED ÅBNING. SE IKKE IND I STRÅLEN-HELLER IKKE MED OPTISKE INSTRUMENTER.
VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ TUIJOTA SÄTEESEEN ÄLÄKÄ KATSO SITÄ OPTISEN LAITTEEN LÄPI.
VARNING-OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. STIRRA EJ IN I STRÅLEN OCH BETRAKTA EJ STRÅLEN GENOM OPTISKT INSTRUMENT.
ADVERSEL-USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. STIRR IKKE INN I STRÅLEN ELLER SE DIREKTE MED OPTISKE INSTRUMENTER.

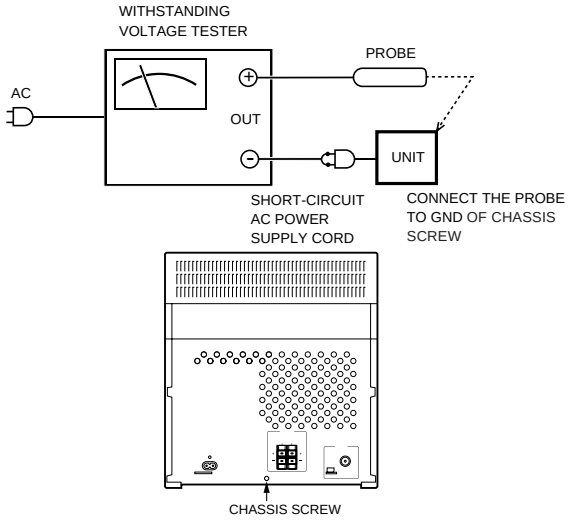
VAROITUS! LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.

VARNING - OMAPPARATENANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING SPECIFICERAS. KAN ANVÄNDAREN UTSÄTTAS FÖR OSYNLIG LASERSTRÅLNING, SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.

IMPORTANT SERVICE NOTES (FOR U.K. ONLY)

Before returning the unit to the customer after completion of a repair or adjustment it is necessary for the following withstand voltage test to be applied to ensure the unit is safe for the customer to use.
Setting of Withstanding Voltage Tester and set.

Set name	set value
Withstanding Voltage Tester	
Test voltage	4,240 VPEAK 3,000 VRMS
Set time	6 secs
Set current (Cutoff current)	4 mA
Unit	
Judgment	
OK: The “GOOD” lamp lights. NG: The “NG” lamp lights and the buzzer sounds.	



FOR A COMPLETE DESCRIPTION OF THE OPERATION OF THIS UNIT, PLEASE REFER TO THE OPERATION MANUAL.

SPECIFICATIONS

CD-BA1200H

● General

Power source: AC 230 V, 50 Hz
Power consumption: 32 W
Dimensions: Width; 270 mm (10-5/8")
Height; 300 mm (11-13/16")
Depth; 373 mm (14-11/16")
Weight: 5.0 kg (11.0 lbs.)

● Amplifier section

Output power: (For U.K.) RMS; 20 W (10 W + 10 W) (10 % T.H.D.)
RMS; 14.6 W (7.3 W + 7.3 W) (0.9 % T.H.D.)
Output power: (Except For U.K.) PMPO; 64 W
MPO; 32 W (16 W + 16 W) (DIN 45 324)
RMS; 20 W (10 W + 10 W) (DIN 45 324)
RMS; 14.6 W (7.3 W + 7.3 W) (DIN 45 500)
Output terminals: Speakers; 8 ohms
Headphones; 16-50 ohms (recommended; 32 ohms)

● Compact disc player section

Type: 3-disc multi-play compact disc player
Signal readout: Non-contact, 3-beam semi-conductor laser pickup
D/A converter: 1-bit D/A converter
Frequency response: 20 - 20,000 Hz
Dynamic range: 90 dB (1 kHz)

● Tuner section

Frequency range: FM; 87.5-108 MHz
AM; 522-1,620 kHz

● Cassette deck section

Frequency response: 50-14,000 Hz (Normal tape)
Signal/noise ratio: 55 dB (TAPE 1, playback)
50 dB (TAPE 2, recording/playback)
Wow and flutter: (For U.K.) 0.3 % (WRMS)
Wow and flutter: (Except For U.K.) 0.35 % (DIN 45 511)

CP-BA1200H

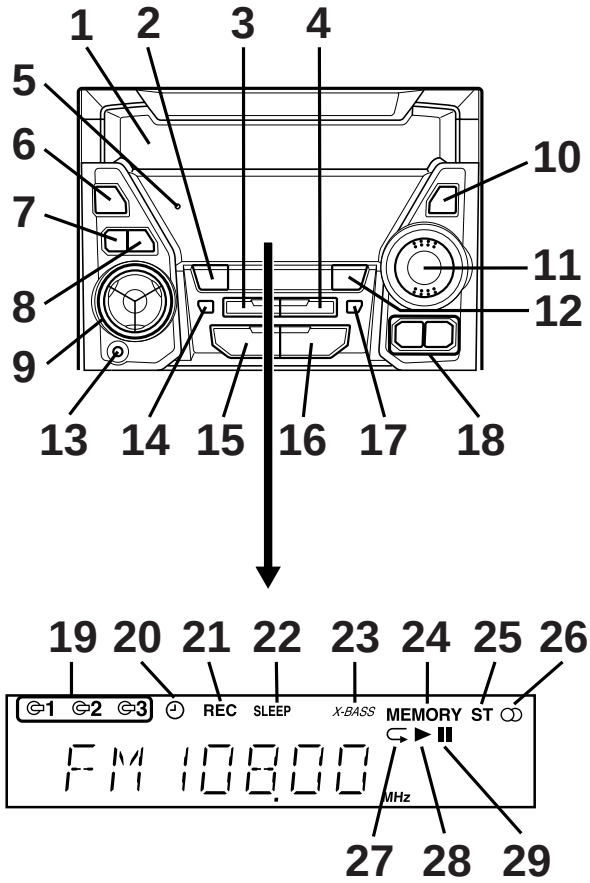
Type: 10 cm (4") full-range speaker
Maximum input power: 20 W
Rated input power: 10 W
Impedance: 8 ohms
Dimensions: Width; 220 mm (8-11/16")
Height; 300 mm (11-13/16")
Depth; 180 mm (7-1/16")
Weight: 2.0 kg (4.4 lbs.)/each

Specifications for this model are subject to change without prior notice.

NAMES OF PARTS

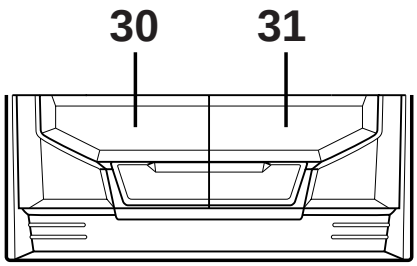
CD-BA1200H

■ Front panel



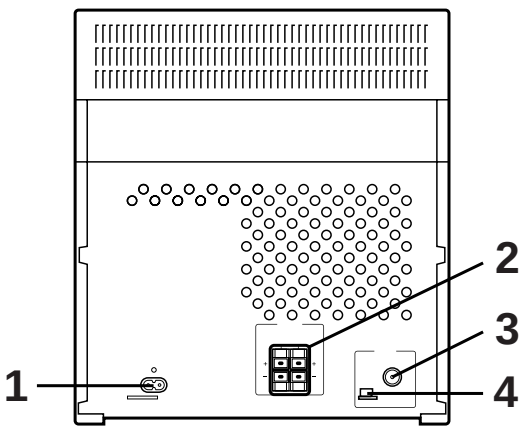
1. (CD) Disc Tray
2. (CD) Disc Skip Button
3. (CD) Track Down/Review Button
   (TUNER) Preset Down Button
   (TAPE 2) Rewind Button
4. (CD) Track Up/Cue Button
   (TUNER) Preset Up Button
   (TAPE 2) Fast Forward Button
5. Timer Set Indicator
6. On/Stand-by Button
7. Timer/Sleep Button
8. Clock Button
9. Function Selector Buttons
10. Equalizer Mode Selector/Extra Bass/Demo Mode Button
11. Volume Up/Down Buttons
12. (CD) Open/Close Button
13. Headphone Socket
14. Memory/Set Button
15. (CD/TAPE) Stop Button
16. (CD) Play/Repeat Button
    (TAPE) Play Button
17. (TAPE 2) Record Pause Button
18. Tuning and Time Up/Down Buttons

19. (CD) Disc Number Indicators
20. Timer Indicator
21. Record Indicator
22. Sleep Indicator
23. Extra Bass Indicator
24. (CD/TUNER) Memory Indicator
25. FM Stereo Mode Indicator
26. FM Stereo Indicator
27. (CD) Repeat Indicator
28. (CD/TAPE) Play Indicator
29. (CD) Pause Indicator



30. (TAPE 1) Cassette Compartment
31. (TAPE 2) Cassette Compartment

■ Rear panel



1. AC Power Input Socket
2. Speaker Terminals
3. FM 75 Ohms Aerial Socket
4. AM Loop Aerial Socket

CD-BA1200H

■ Remote control

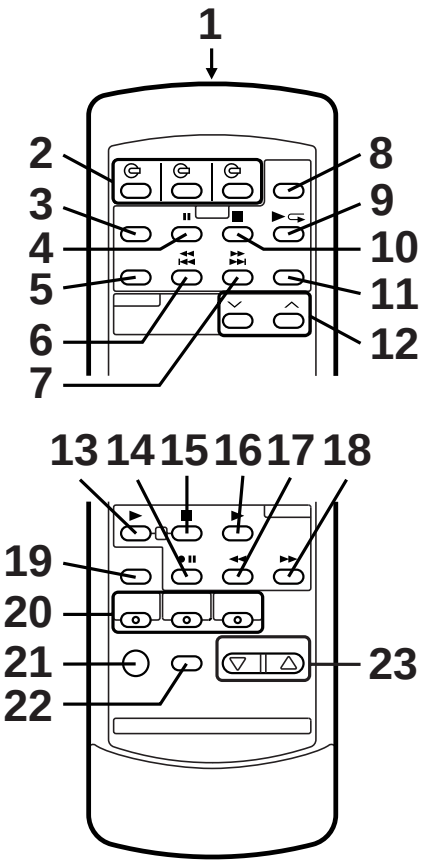
1. Remote Control Transmitter LED

● CD control section
2. Disc Number Select Buttons
3. Memory Button
4. Pause Button
5. Clear Button
6. Track Down/Review Button
7. Track Up/Cue Button
8. Disc Skip Button
9. Play/Repeat Button
10. Stop Button
11. Random Button

● Tuner control section
12. Preset Up/Down Buttons

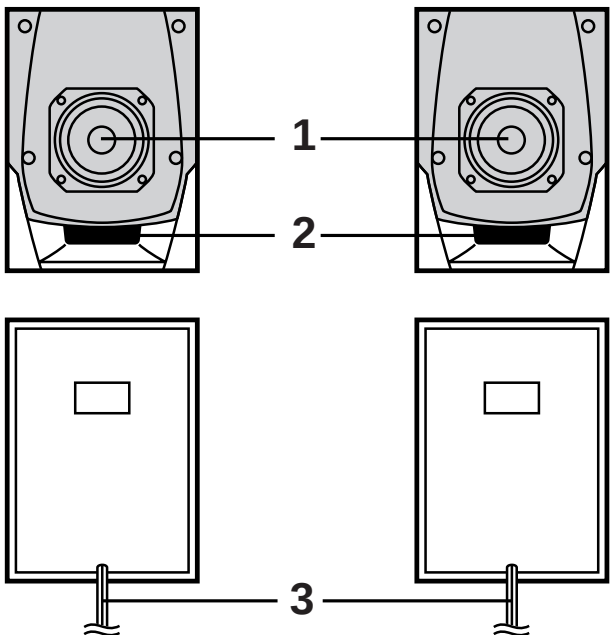
● Tape control section
13. (TAPE 1) Play Button
14. (TAPE 2) Record Pause Button
15. (TAPE 1/2) Stop Button
16. (TAPE 2) Play Button
17. (TAPE 2) Rewind Button
18. (TAPE 2) Fast Forward Button

● Common section
19. Equalizer Mode Selector Button
20. Function Selector Buttons
21. On/Stand-by Button
22. Extra Bass Button
23. Volume Up/Down Buttons



CP-BA1200H

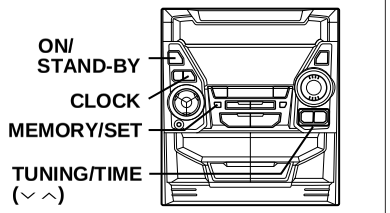
1. Full-Range Speaker
2. Bass Reflex Duct
3. Speaker Wire



SETTING THE CLOCK

In this example, the clock is set for the 24-hour (0:00) system.

(Main unit operation)



1 **Press the ON/STAND-BY button to enter the stand-by mode.**

2 **Press the CLOCK button.**

3 **Within 5 seconds, press the MEMORY/SET button.**

4 **Press the TUNING/TIME (∨ or ∧) button to select the time display mode.**

0:00 ⟷ AM 0:00 ⟷ AM 12:00

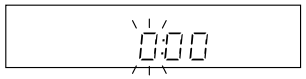
"0:00" → The 24-hour display will appear.
(0:00 - 23:59)

"AM 0:00" → The 12-hour display will appear.
(AM 0:00 - PM 11:59)

"AM 12:00" → The 12-hour display will appear.
(AM 12:00 - PM 11:59)

- Note that this can only be set when the unit is first installed or it has been reset.

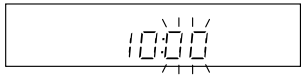
5 **Press the MEMORY/SET button.**



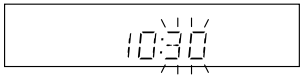
6 **Press the TUNING/TIME (∨ or ∧) button to adjust the hour.**

- Press the TUNING/TIME (∨ or ∧) button once to advance the time by 1 hour. Hold it down to advance continuously.
- When the 12-hour display is selected, "AM" will change automatically to "PM".

7 **Press the MEMORY/SET button.**



8 **Press the TUNING/TIME (∨ or ∧) button to adjust the minutes.**



- Press the TUNING/TIME (∨ or ∧) button once to advance the time by 1 minute. Hold it down to change the time in 5 - minute intervals.
- The hour setting will not advance even if minutes advance from "59" to "00".

9 **Press the MEMORY/SET button.**

- The clock starts operating from "0" second. (Seconds are not displayed.) And then the clock display will disappear after a few seconds.

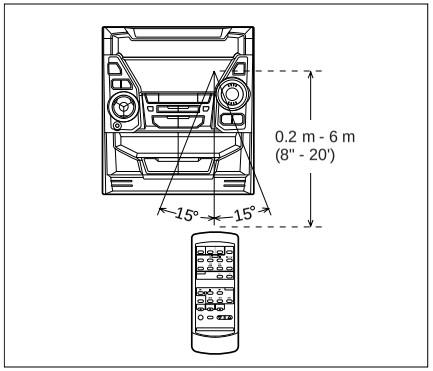
To see the time display:
Press the CLOCK button.
- The time display will appear for about 5 seconds.

Note:
- The clock display will flash on and off at the push of the CLOCK button when the AC power supply is restored after a power failure occurs or after the AC power lead is disconnected. If this happens, follow the procedure below to change the clock time.

To change the clock time:
1 Press the CLOCK button.
2 Within 5 seconds, press the MEMORY/SET button.
3 Perform steps 6 - 9 above.

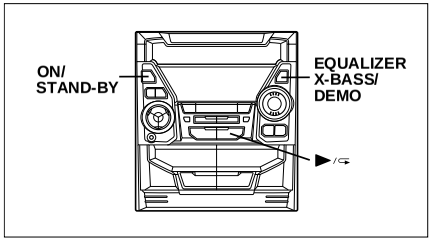
To change the time display mode:
1 Perform steps 1 - 2 in "RESETTING THE MICROCOMPUTER".
2 Perform steps 1 - 9 above.

REMOTE CONTROL



Notes concerning use:
- Replace the batteries if the operating distance is reduced or if the operation becomes erratic.
- Periodically clean the transmitter LED on the remote control and the sensor on the main unit with a soft cloth.
- Exposing the sensor on the main unit to strong light may interfere with operation. Change the lighting or the direction of the unit.
- Keep the remote control away from moisture, excessive heat, shock, and vibrations.

RESETTING THE MICROCOMPUTER



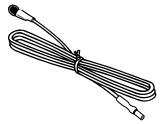
Reset the microcomputer under the following conditions:
- To erase all of the stored memory contents (clock and timer settings, and tuner and CD presets).
- If the display is not correct.
- If the operation is not correct.

1 **Press the ON/STAND-BY button to enter the stand-by mode.**

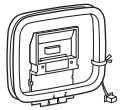
2 **Whilst pressing down the ►/⊂ button and the EQUALIZER/X-BASS/DEMO button, hold down the ON/STAND-BY button for at least 1 second.**
- "CLEAR AL" will appear.

Caution:
- The operation explained above will erase all data stored in memory including clock and timer settings, and tuner and CD presets.

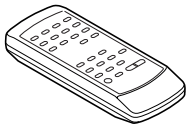
1 Check the supplied accessories



FM aerial × 1

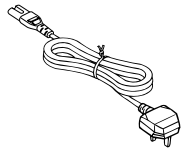


AM loop aerial × 1



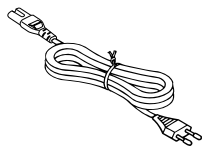
Remote control × 1

[For U.K.]



AC power lead × 1

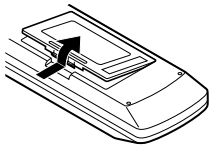
[Except for U.K.]



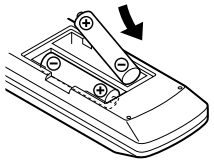
AC power lead × 1

2 Putting batteries into the remote control

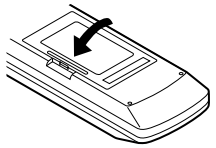
1 Remove the battery cover.



2 Insert the batteries.

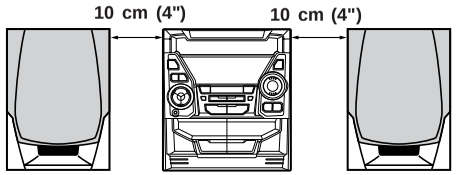


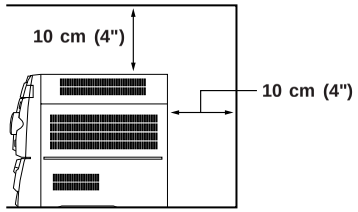
3 Replace the battery cover.



● 2 "AA" size batteries
(UM/SUM-3, R6, HP-7 or similar)

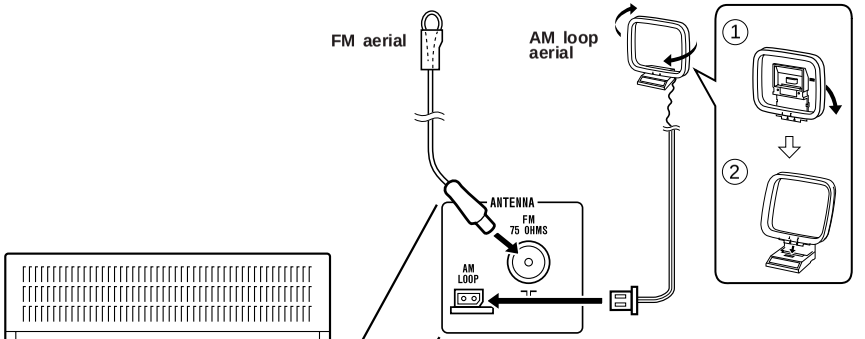
3 Placing the system



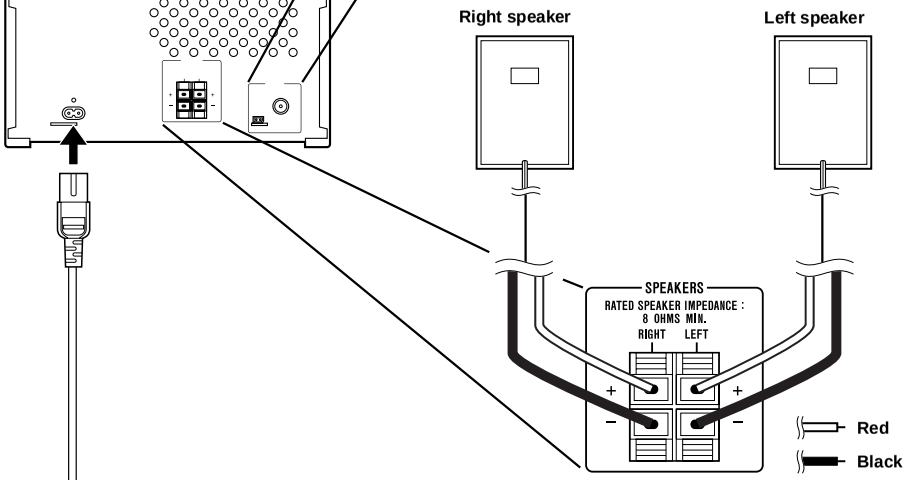


4 Connections

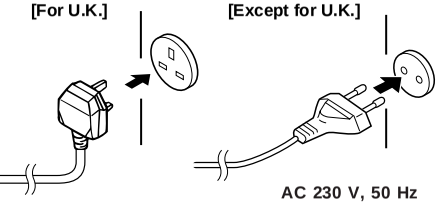
1 Connect the AM and FM aerials.



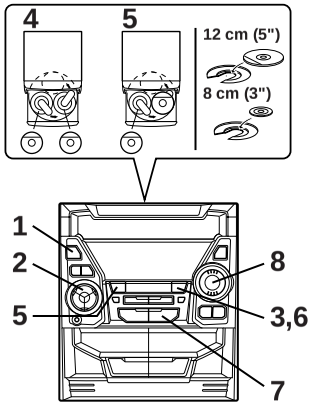
2 Connect the speaker system.



3 Connect the AC power lead.

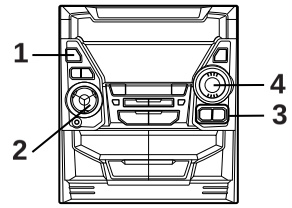


5 Listening to a CD



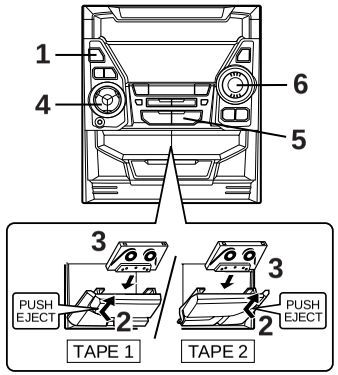
1 Press the ON/STAND-BY button to turn the power on.
2 Press the CD button.
3 Press the OPEN/CLOSE button to open the disc tray.
4 Place the CD(s) on the disc tray, label side up.
5 When loading a third disc, press the DISC SKIP button to turn the disc tray, then place the CD in the open position.
6 Press the OPEN/CLOSE button to close the disc tray.
7 Press the ▶/II button.
8 Adjust the sound volume using the VOLUME buttons.

6 Listening to the radio



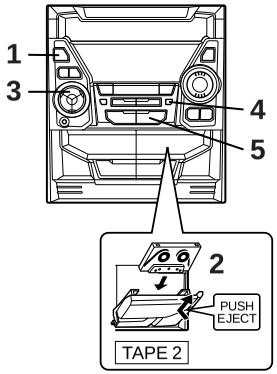
1 Press the ON/STAND-BY button to turn the power on.
2 Press the TUNER (BAND) button to select FM ST, FM or AM.
3 Press the TUNING/TIME (∨ or ∧) button to tune into the desired station.
4 Adjust the sound volume using the VOLUME buttons.

7 Listening to a tape



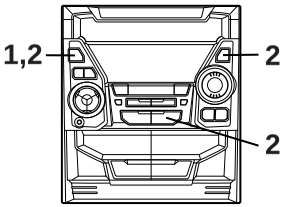
1 Press the ON/STAND-BY button to turn the power on.
2 Open the cassette door by pushing the area marked "PUSH EJECT".
3 Load the cassette into the TAPE 1 or TAPE 2 cassette compartment.
● And then, close the cassette door completely until it is locked.
4 Press the TAPE (1 ⇄ 2) button to select the TAPE 1 or TAPE 2.
5 Press the ▶/II button to start playback.
6 Adjust the sound volume using the VOLUME buttons.

8 Recording from CDs



1 Press the ON/STAND-BY button to turn the power on.
2 Load a cassette into the TAPE 2 cassette compartment.
3 Press the CD button and load the desired disc.
4 Press the REC PAUSE button.
5 Press the ▶/II button.

● Resetting the microcomputer



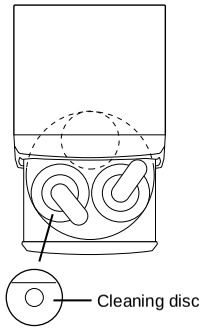
If this product is subjected to strong external interference (mechanical shock, excessive static electricity, abnormal supply voltage due to lightning, etc.) or if it is operated incorrectly, it may malfunction or the display may not function correctly. If such a problem occurs, do the following:

1 Press the ON/STAND-BY button to enter the stand-by mode.
2 Whilst pressing down the ▶/II button and the EQUALIZER/X-BASS/DEMO button, hold down the ON/STAND-BY button for at least 1 second.
● "CLEAR AL" will appear.

Caution:
● The operation explained above will erase all data stored in memory including clock and timer settings, and tuner and CD presets.

● CD pickup cleaning

Clean the dust or stain on the CD pickup lens using a commercial cleaning disc (brush type).



DISASSEMBLY

Caution on Disassembly

Follow the below-mentioned notes when disassembling the unit and reassembling it, to keep it safe and ensure excellent performance:

1. Take cassette tape and compact disc out of the unit.
2. Be sure to remove the power supply plug from the wall outlet before starting to disassemble the unit.
3. Take off nylon bands or wire holders where they need to be removed when disassembling the unit. After servicing the unit, be sure to rearrange the leads where they were before disassembling.
4. Take sufficient care on static electricity of integrated circuits and other circuits when servicing.

CD-BA1200H

STEP	REMOVAL	PROCEDURE	FIGURE
1	Top Cabinet	1. Screw ..... (A1) x4	9-1
2	Side Panel (Left/right)	1. Screw ..... (B1) x4	9-1
3	CD Player Unit/ CD Tray Cover	1. Turn on the power supply, open the disc tray, take out the CD cover, and close. (Note 1) 2. Screw ..... (C1) x1 3. Hook ..... (C2) x3 4. Hook ..... (C3) x2 5. Socket ..... (C4) x2	9-2
4	Rear Panel	1. Screw ..... (D1) x6	9-2
5	Main/Headphones PWB	1. Screw ..... (E1) x8 2. Socket ..... (E2) x4 3. Flat Cable ..... (E3) x1 4. Tip ..... (E4) x1	10-2
6	Front Panel	1. Screw ..... (F1) x3	10-2
7	Display PWB	1. Screw ..... (G1) x9 2. Flat Cable ..... (G2) x1	10-3
8	Tape Mechanism	1. Open the cassette holder. 2. Screw..... (H1) x5	10-3
9	Turntable	1. Hook ..... (J1) x2 2. Cover ..... (J2) x1	10-4
10	Disc Tray	1. Turn fully the lock lever in the arrow direction. 2. While holding the lock lever, rotate the cam gear until the cam gear rib engages with the clamp lever. 3. Push the slide holder backward to engage the claw with the groove and remove it in the direction of the arrow. ..... (K1) x6	9-3 10-1 10-5
11	CD Servo PWB (Note 2)	1. Screw ..... (L1) x1 2. Hook ..... (L2) x2 3. Socket ..... (L3) x4	10-6
12	CD Mechanism	1. Hook ..... (M1) x2 2. Hook ..... (M2) x3	11-1
13	Loading Motor PWB	1. Hook ..... (N1) x5	11-1

Note 1:

How to open the changer manually. (Fig. 9-3)

1. In this state, turn fully the lock lever in the arrow direction through the hole on the loading chassis bottom.
2. While holding the lock lever, rotate the cam gear anticlockwise until the cam gear rib engages with the clamp lever. (Fig. 10-1)
3. After that, push forward the CD slide holder.

Note 2:

1. After removing the connector for the optical pickup from the connector, wrap the conductive aluminium foil around the front end of the connector to protect the optical pickup from electrostatic damage.

CD-BA1200H

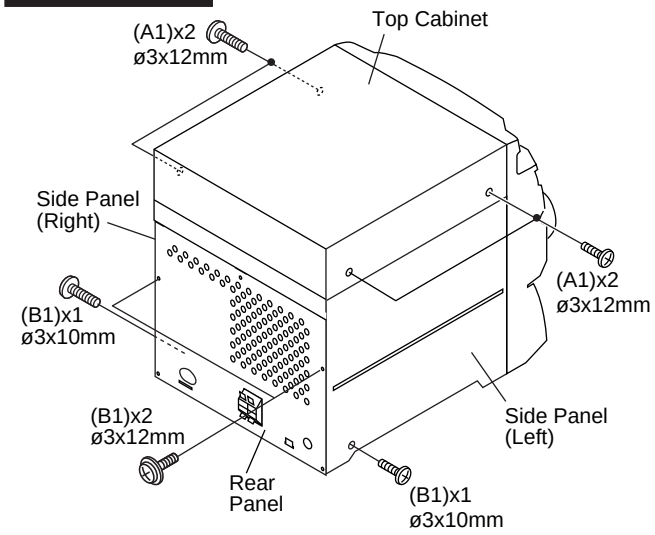


Figure 9-1

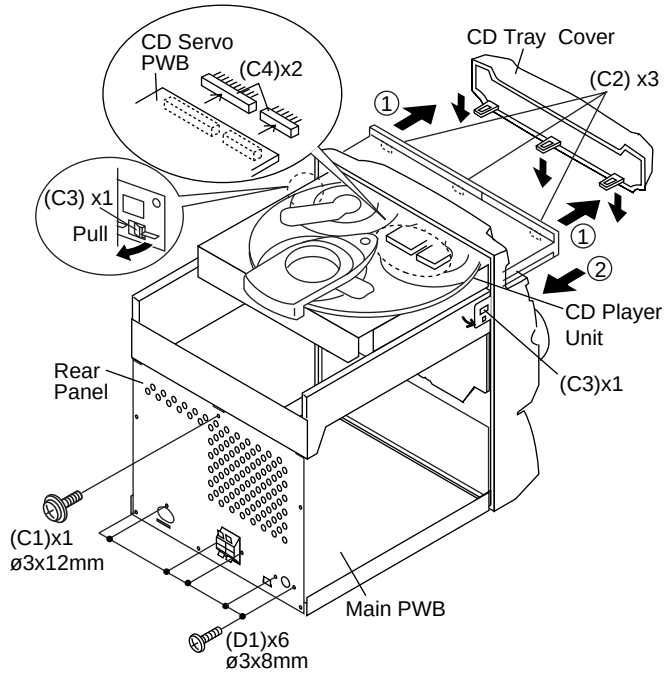


Figure 9-2

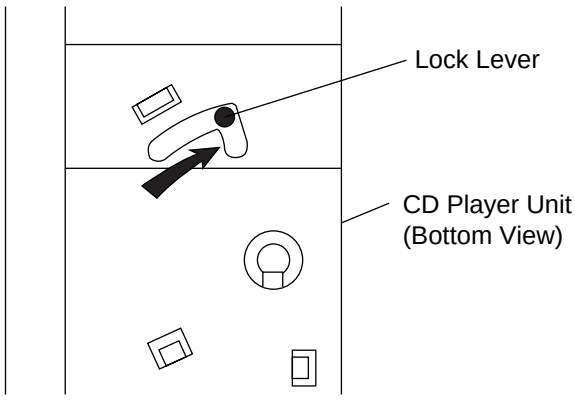


Figure 9-3

Note 3:

1. Be careful not to break the claw of the CD mechanism.
2. When fining back the cam gear assembly, let it lock by front movement.

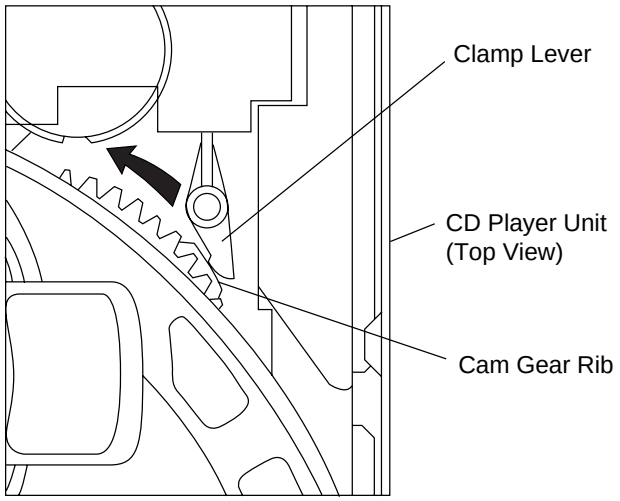


Figure 10-1

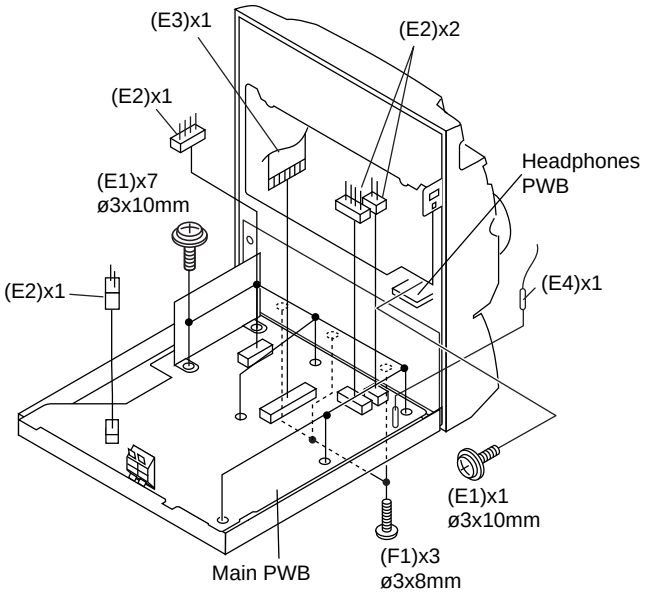


Figure 10-2

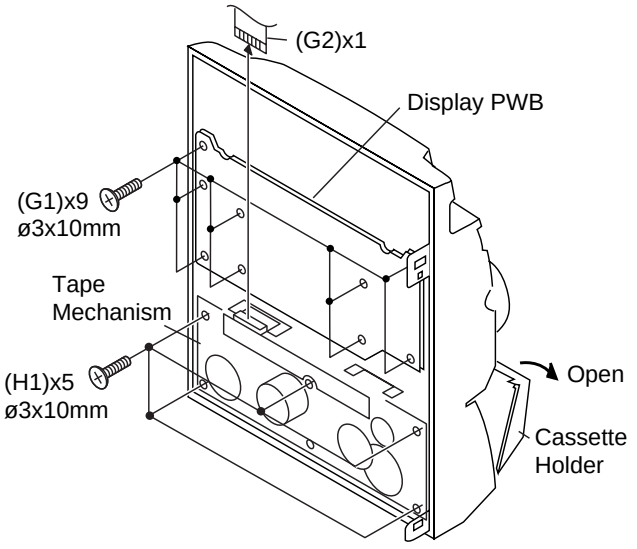


Figure 10-3

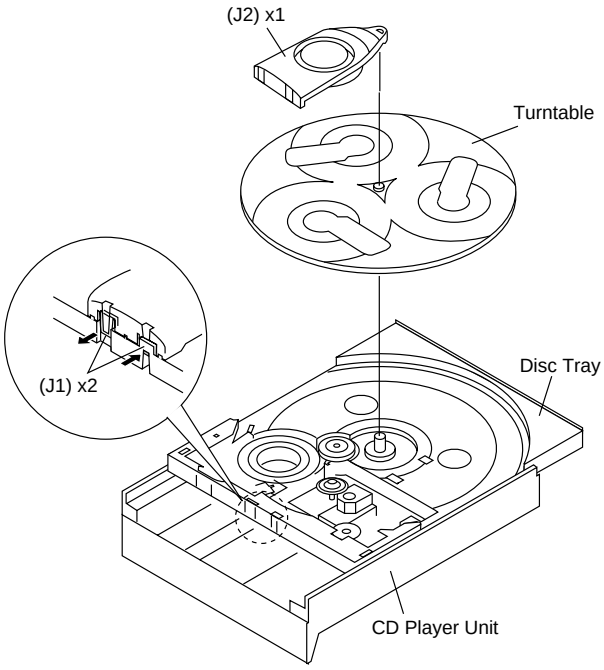


Figure 10-4

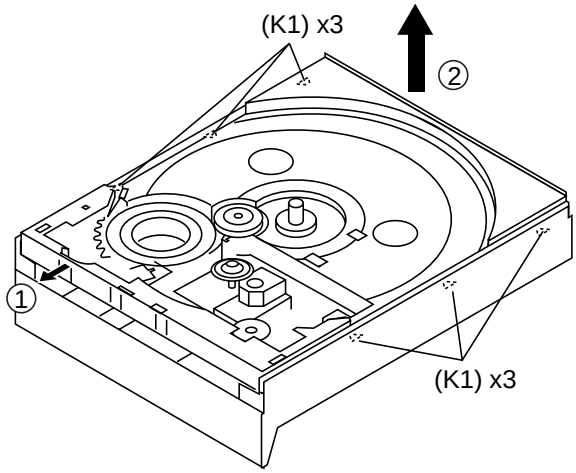


Figure 10-5

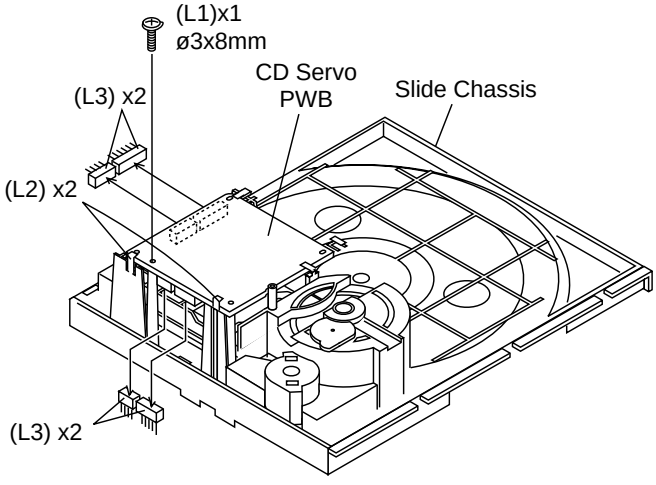


Figure 10-6

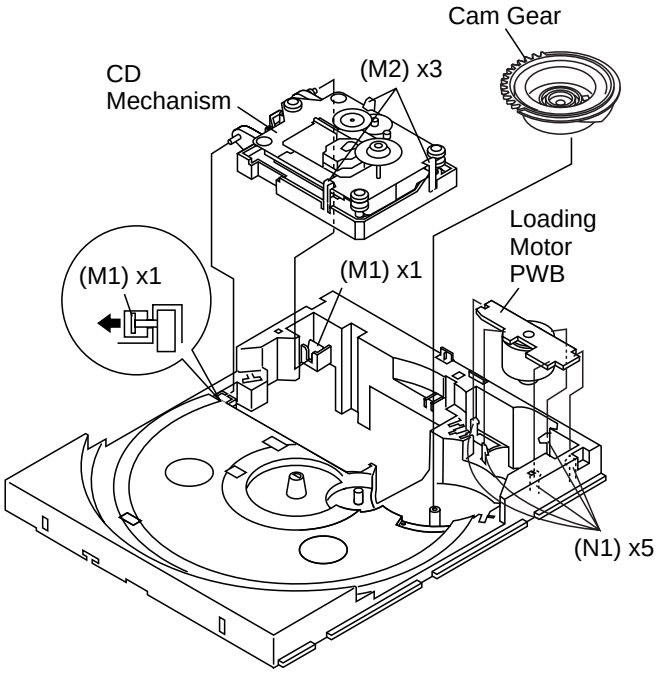


Figure 11-1

CP-BA1200H

STEP	REMOVAL	PROCEDURE	FIGURE
1	Speaker	1. Net ..... (A1) x1	11-2
		2. Duct Panel ..... (A2) x1	
		3. Screw ..... (A3) x4	11-3

CP-BA1200H

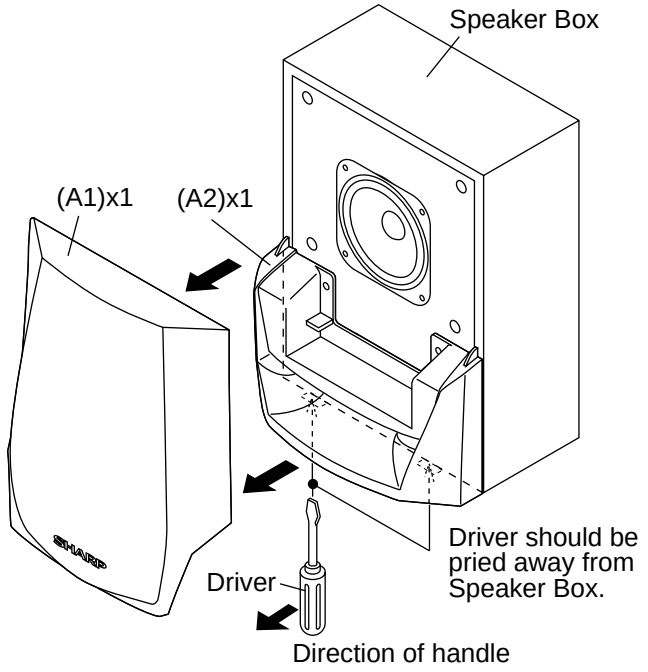


Figure 11-2

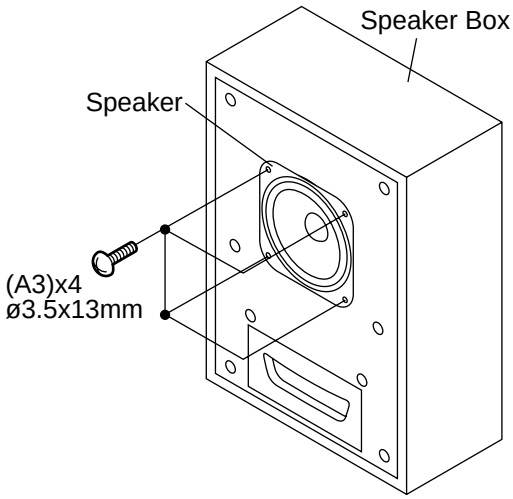


Figure 11-3

REMOVING AND REINSTALLING THE MAIN PARTS

TAPE MECHANISM SECTION

Perform steps 1 to 6 and 8 of the disassembly method to remove the tape mechanism.

How to remove the record/playback and erase heads (TAPE 2) (See Fig. 12-1)

1. Carefully remove the record/playback head and erase head screw (A1) x 2 pcs.

How to remove the playback head (TAPE 1) (See Fig. 12-2)

1. Carefully remove the playback head screw (B1) x 2 pcs.

How to remove the pinch roller (TAPE 1/2) (See Fig. 12-3)

1. Carefully bend the pinch roller pawl in the direction of the arrow **<A>**, and remove the pinch roller (C1) x1 pc., in the direction of the arrow **<B>**.

Note:

When installing the pinch roller, pay attention to the spring mounting position.

How to remove the belt (TAPE 2) (See Fig. 12-4)

1. Remove the main belt (D1) x 1 pc., from the motor side.
2. Remove the FF/REW belt (D2) x 1 pc.

How to remove the belt (TAPE 1) (See Fig. 12-4)

1. Remove the main belt (E1) x 1 pc., from the motor side.
2. Remove the FF/REW belt (E2) x 1 pc.

How to remove the motor (See Fig. 12-5)

1. Remove the screws (F1) x 2 pcs., to remove the motor.

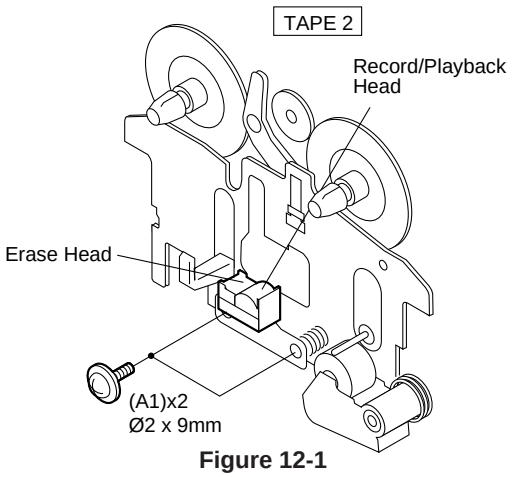


Figure 12-1

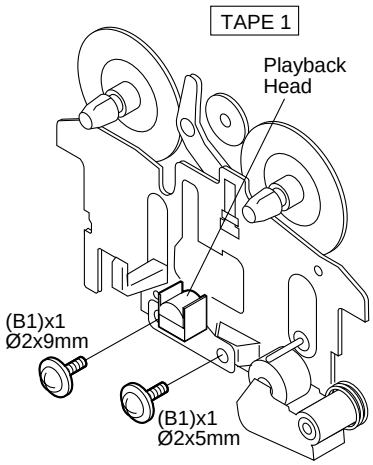


Figure 12-2

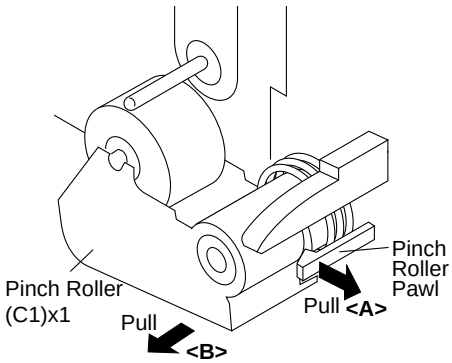


Figure 12-3

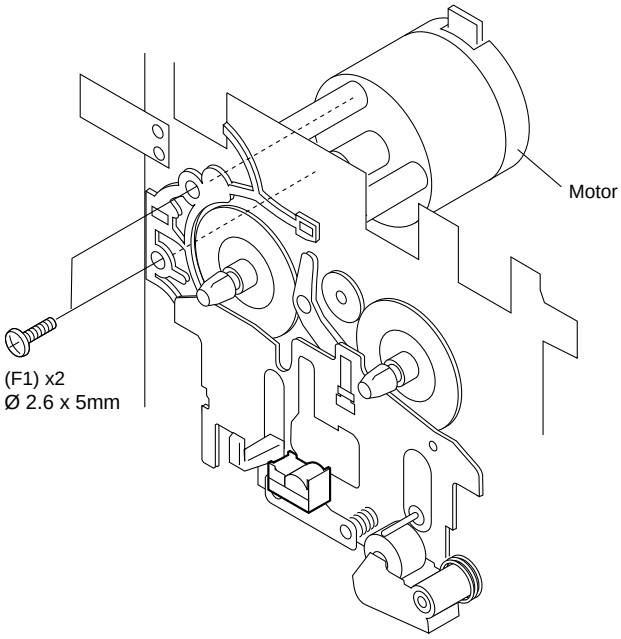


Figure 12-5

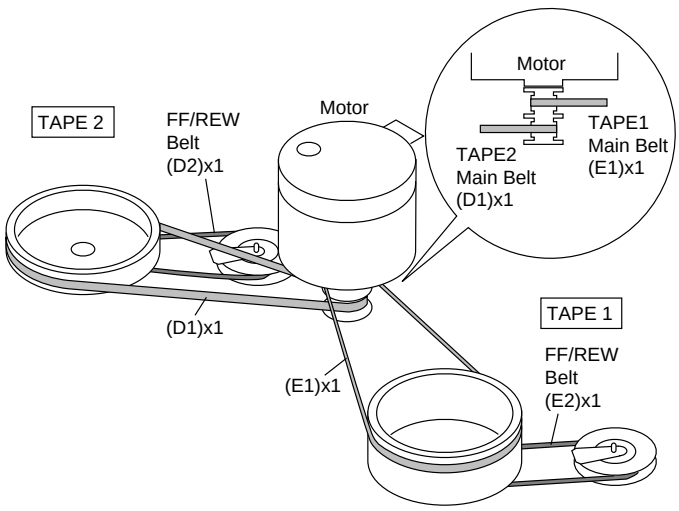


Figure 12-4

CD MECHANISM SECTION

Perform steps 1, 2, 3, 9 and 12 of the disassembly method to remove the CD mechanism.

How to remove the loading motor (See Fig. 13-1)

1. Bend the hooks (A1) x 5 pcs., to remove the loading motor.

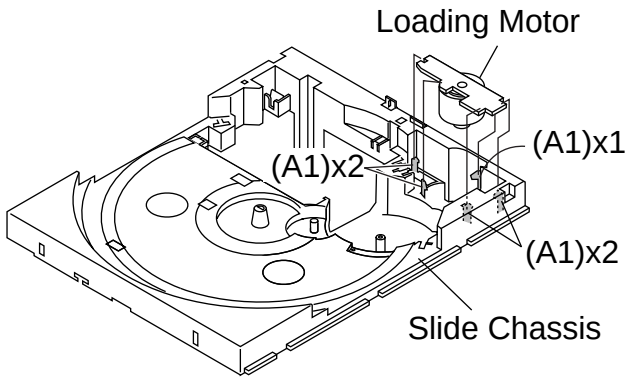


Figure 13-1

How to remove the pickup (See Fig. 13-2)

1. Remove the screws (B1) x 2 pcs., to remove the shaft (B2).
2. Remove the stop washer (B3) x 1 pc., to remove the gear (B4).
3. Remove the pickup.

Note

After removing the connector for the optical pickup from the connector, wrap the conductive aluminium foil around the front end of connector to protect the optical pickup from electrostatic damage.

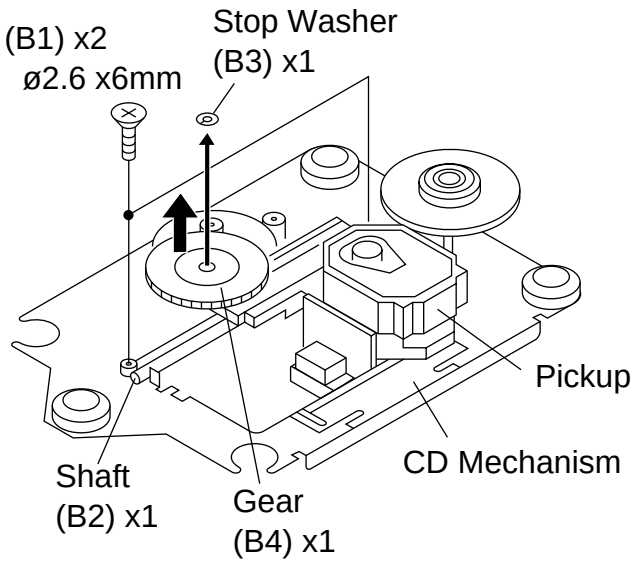


Figure 13-2

ADJUSTMENT

MECHANISM SECTION

• Driving Force Check

Torque Meter	Specified Value
Play: TW-2111	Tape 1: Over 80 g Tape 2: Over 80 g

• Torque Check

Torque Meter	Specified Value	
	Tape 1	Tape 2
Play: TW-2111	30 to 80 g.cm	30 to 80 g.cm
Fast forward: TW-2231	—	70 to 180 g.cm
Rewind: TW-2231	—	70 to 180 g.cm

• Tape Speed

	Test Tape	Adjusting Point	Specified Value	Instrument Connection
Normal speed	MTT-111	Variable Resistor in motor.	3,000 ± 30 Hz	Speaker terminal (Load resistance: 6 ohms)

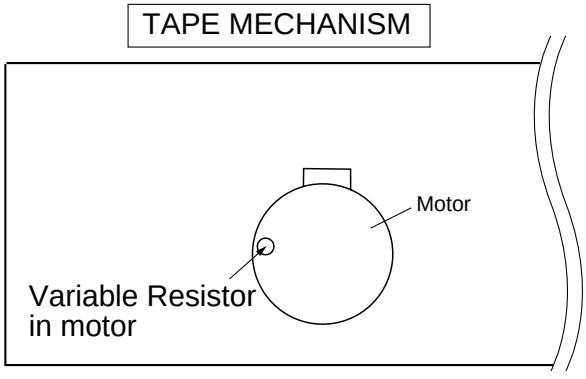


Figure 13-3

TUNER SECTION

fL: Low-range frequency
fH: High-range frequency

- **AM IF/RF**

Signal generator: 400 Hz, 30%, AM modulated

Test Stage	Frequency	Frequency Display	Setting/ Adjusting Parts	Instrument Connection
AM IF	450 kHz	1,620 kHz	T351	*1
AM Band Coverage	—	522 kHz	(fL): T306 1.1 ± 0.1 V	*2
AM Tracking	990 kHz	990 kHz	(fL): T303	*1

*1. Input: Antenna Output: TP302
*2. Input: Antenna Output: TP301

- **FM**

Notes:

1: Description of the "FM IF Adjustment" is not carried on this Manual. It is because the IF coil in the FM front end section has been best adjusted in the factory so that its further adjustment is not needed at the field. When replacing the FM front end assembly, no adjustment is needed either.
2: The parts in the FM front end section are prepared in a complete unit, so you can't obtain each part individually

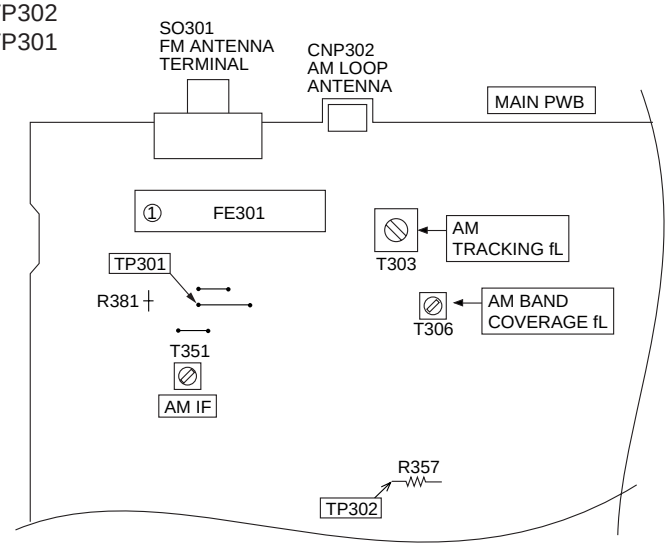


Figure 14-1 ADJUSTMENT POINTS

CD SECTION

- **Adjustment**

Since this CD system incorporates the following automatic adjustment functions, readjustment is not needed when replacing the pickup. Therefore, different PWBs and pickups can be combined freely.

Each time a disc is changed, these adjustments are performed automatically. Therefore, playback of each disc can be performed under optimum conditions.

Items adjusted automatically

(1) Offset adjustment (The offset voltage between the head amplifier output and the VREF reference voltage is compensated inside the IC.)
  * Focus offset adjustment
  * Tracking offset adjustment

(2) Tracking balance adjustment (waveform drawing Fig. 14-2 EFBL)

(3) Gain adjustment (The gain is compensated inside the IC so that the loop gain at the gain crossover frequency will be 0dB.)
  * Focus gain adjustment
  * Tracking gain adjustment

CD ERROR CODE DESCRIPTION

Error	State Code
	[Servo System Error]
0001	Cannot detect Pickup-in SW
0002	DSP access error
	[Error during close operation]
0101	Open/Close SW Low → High not functioning
0103	Open/Close SW High → Low not functioning
	[Error during open operation]
0201	Open/Close SW Low → High not functioning
0203	Open/Close SW High → Low not functioning
	[Error during skip operation]
0302	Pickup-in SW is not detected
0306	During Disc 1 search, Open/Close SW or Clamp SW or Disc SW do not change to low.
0307	Clamp SW Low → High not functioning
0308	Clamp SW High → Low not functioning

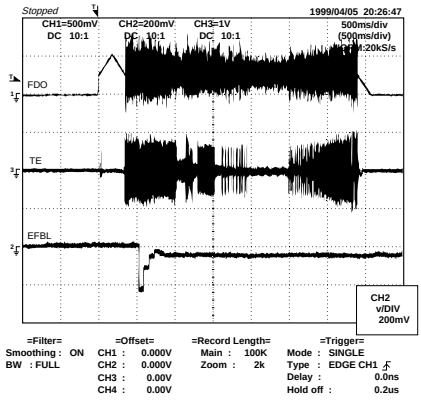

Stopped
1999/04/05 20:26:47
CH1=500mV DC 10:1
CH2=200mV DC 10:1
CH3=1V DC 10:1
500ms/div
FDO
TE
EFBL
CH2 v/DIV 200mV
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.000V CH2 : 0.000V CH3 : 0.00V CH4 : 0.00V
=Record Length= Main : 100K Zoom : 2k
=Trigger= Mode : SINGLE Type : EDGE CH1 Delay : 0.0ns Hold off : 0.2us

Figure 14-2

NOTES ON SCHEMATIC DIAGRAM

- Resistor:
  To differentiate the units of resistors, such symbol as K and M are used: the symbol K means 1000 ohm and the symbol M means 1000 kohm and the resistor without any symbol is ohm-type resistor. Besides, the one with “Fusible” is a fuse type.
- Capacitor:
  To indicate the unit of capacitor, a symbol P is used: this symbol P means micro-micro-farad and the unit of the capacitor without such a symbol is microfarad. As to electrolytic capacitor, the expression “capacitance/withstand voltage” is used.
  (CH), (TH), (RH), (UJ): Temperature compensation
  (ML): Mylar type
  (P.P.): Polypropylene type
- Schematic diagram and Wiring Side of P.W.Board for this model are subject to change for improvement without prior notice.
- The indicated voltage in each section is the one measured by Digital Multimeter between such a section and the chassis with no signal given.
  1. In the tuner section,
     ( ) indicates AM
     < > indicates FM stereo
  2. In the main section, a tape is being played back.
  3. In the deck section, a tape is being played back.
     ( ) indicates the record state.
  4. In the power section, a tape is being played back.
  5. In the CD section, the CD is stopped.
- Parts marked with “ ⚠ ” (⊏ ニ ニ ニ ⊐) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

REF. NO	DESCRIPTION	POSITION
SW1	OPEN/CLOSE	ON—OFF
SW2	CLAMP	ON—OFF
SW3	DISC NUMBER	ON—OFF
SW4	PICKUP IN	ON—OFF
SW701	ON/STAND-BY	ON—OFF
SW702	CLOCK	ON—OFF
SW703	TIMER/SLEEP	ON—OFF
SW709	DISC SKIP	ON—OFF
SW710	OPEN/CLOSE	ON—OFF
SW711	EQUALIZER/X-BASS/DEMO	ON—OFF
SW712	VOLUME UP	ON—OFF
SW713	VOLUME DOWN	ON—OFF

REF. NO	DESCRIPTION	POSITION
SW714	CD	ON—OFF
SW715	TAPE	ON—OFF
SW716	TUNING /TIME DOWN	ON—OFF
SW717	MEMORY/SET	ON—OFF
SW718	REWIND	ON—OFF
SW719	FAST FORWARD	ON—OFF
SW720	PLAY/REPEAT	ON—OFF
SW721	STOP	ON—OFF
SW723	REC/PAUSE	ON—OFF
SW724	TUNING/TIME UP	ON—OFF
SW725	TUNER (BAND)	ON—OFF

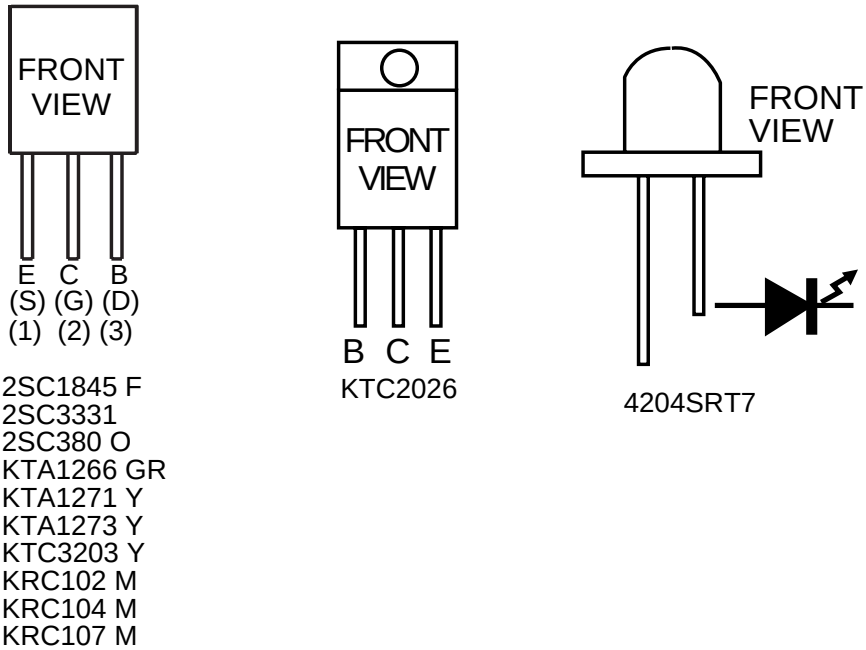
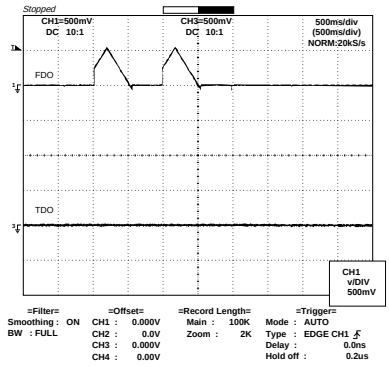


Figure 15 TYPES OF TRANSISTOR AND LED

WAVEFORMS OF CD CIRCUIT

1 IC2 (24)

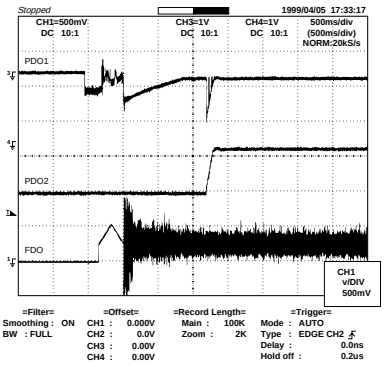
2 IC2 (23)


Stopped
CH1=500mV DC 10:1
CH3=500mV DC 10:1
500ms/div (500ms/div) NORM:20kS/s
FDO
TDO
CH1 v/DIV 500mV
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.000V CH2 : 0.0V CH3 : 0.000V CH4 : 0.00V
=Record Length= Main : 100K Zoom : 2K
=Trigger= Mode : AUTO Type : EDGE CH1 Delay : 0.0ns Hold off : 0.2us

7 IC2 (1)

8 IC2 (2)

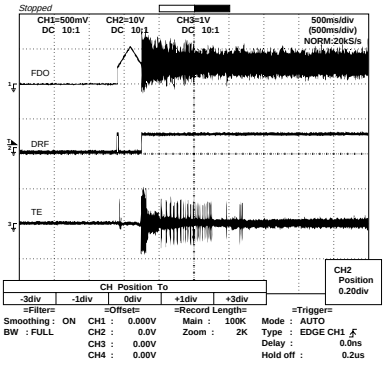
1 IC2 (24)


Stopped
1999/04/05 17:33:17
CH1=500mV DC 10:1
CH3=1V DC 10:1
CH4=1V DC 10:1
500ms/div (500ms/div) NORM:20kS/s
PDO1
PDO2
FDO
CH1 v/DIV 500mV
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.000V CH2 : 0.0V CH3 : 0.00V CH4 : 0.00V
=Record Length= Main : 100K Zoom : 2K
=Trigger= Mode : AUTO Type : EDGE CH2 Delay : 0.0ns Hold off : 0.2us

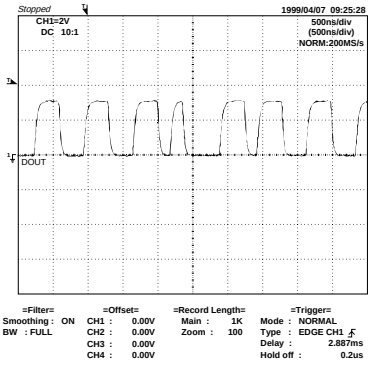
1 IC2 (24)

3 IC2 (72)

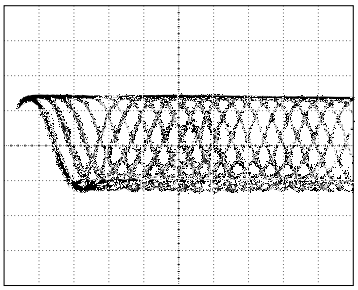
4 IC1 (18), IC2 (16)


Stopped
CH1=500mV DC 10:1
CH2=10V DC 10:1
CH3=1V DC 10:1
500ms/div (500ms/div) NORM:20kS/s
FDO
DRF
TE
CH Position To
-3div -1div 0div +1div +3div
CH2 Position 0.20div
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.000V CH2 : 0.0V CH3 : 0.00V CH4 : 0.00V
=Record Length= Main : 100K Zoom : 2K
=Trigger= Mode : AUTO Type : EDGE CH1 Delay : 0.0ns Hold off : 0.2us

9 IC2 (37)


Stopped
1999/04/07 09:25:28
CH1=2V DC 10:1
500ns/div (500ns/div) NORM:200MS/s
DOUT
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.00V CH2 : 0.00V CH3 : 0.00V CH4 : 0.00V
=Record Length= Main : 1K Zoom : 100
=Trigger= Mode : NORMAL Type : EDGE CH1 Delay : 2.887ms Hold off : 0.2us

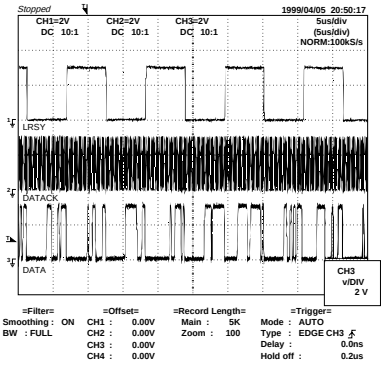
5 IC1 (27)



10 IC2 (57)

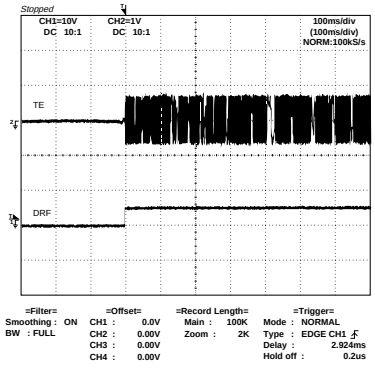
11 IC2 (58)

12 IC2 (59)


Stopped
1999/04/05 20:50:17
CH1=2V DC 10:1
CH2=2V DC 10:1
CH3=2V DC 10:1
5us/div (5us/div) NORM:100kS/s
LRSY
DATACK
DATA
CH3 v/DIV 2 V
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.00V CH2 : 0.00V CH3 : 0.00V CH4 : 0.00V
=Record Length= Main : 5K Zoom : 100
=Trigger= Mode : AUTO Type : EDGE CH3 Delay : 0.0ns Hold off : 0.2us

4 IC1 (18), IC2 (16)

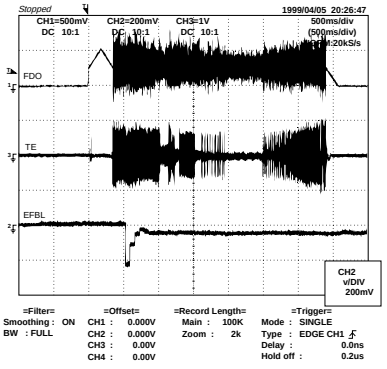
3 IC2 (72)


Stopped
CH1=10V DC 10:1
CH2=1V DC 10:1
100ms/div (100ms/div) NORM:100kS/s
TE
DRF
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.0V CH2 : 0.00V CH3 : 0.00V CH4 : 0.00V
=Record Length= Main : 100K Zoom : 2K
=Trigger= Mode : NORMAL Type : EDGE CH1 Delay : 2.924ms Hold off : 0.2us

1 IC2 (24)

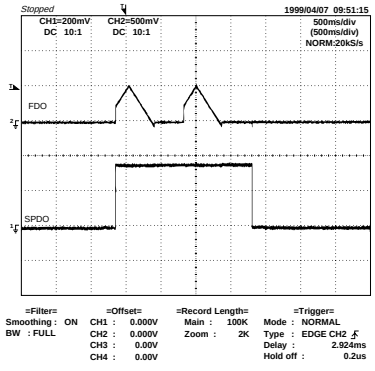
4 IC1 (18), IC2 (16)

13 IC1 (13), IC2 (22)


Stopped
1999/04/05 20:26:47
CH1=500mV DC 10:1
CH2=200mV DC 10:1
CH3=1V DC 10:1
500ms/div (500ms/div) NORM:20kS/s
FDO
TE
EFBL
CH2 v/DIV 200mV
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.000V CH2 : 0.000V CH3 : 0.00V CH4 : 0.00V
=Record Length= Main : 100K Zoom : 2k
=Trigger= Mode : SINGLE Type : EDGE CH1 Delay : 0.0ns Hold off : 0.2us

1 IC2 (24)

6 IC2 (25)


Stopped
1999/04/07 09:51:15
CH1=200mV DC 10:1
CH2=500mV DC 10:1
500ms/div (500ms/div) NORM:20kS/s
FDO
SPDO
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.000V CH2 : 0.000V CH3 : 0.00V CH4 : 0.00V
=Record Length= Main : 100K Zoom : 2K
=Trigger= Mode : NORMAL Type : EDGE CH2 Delay : 2.924ms Hold off : 0.2us

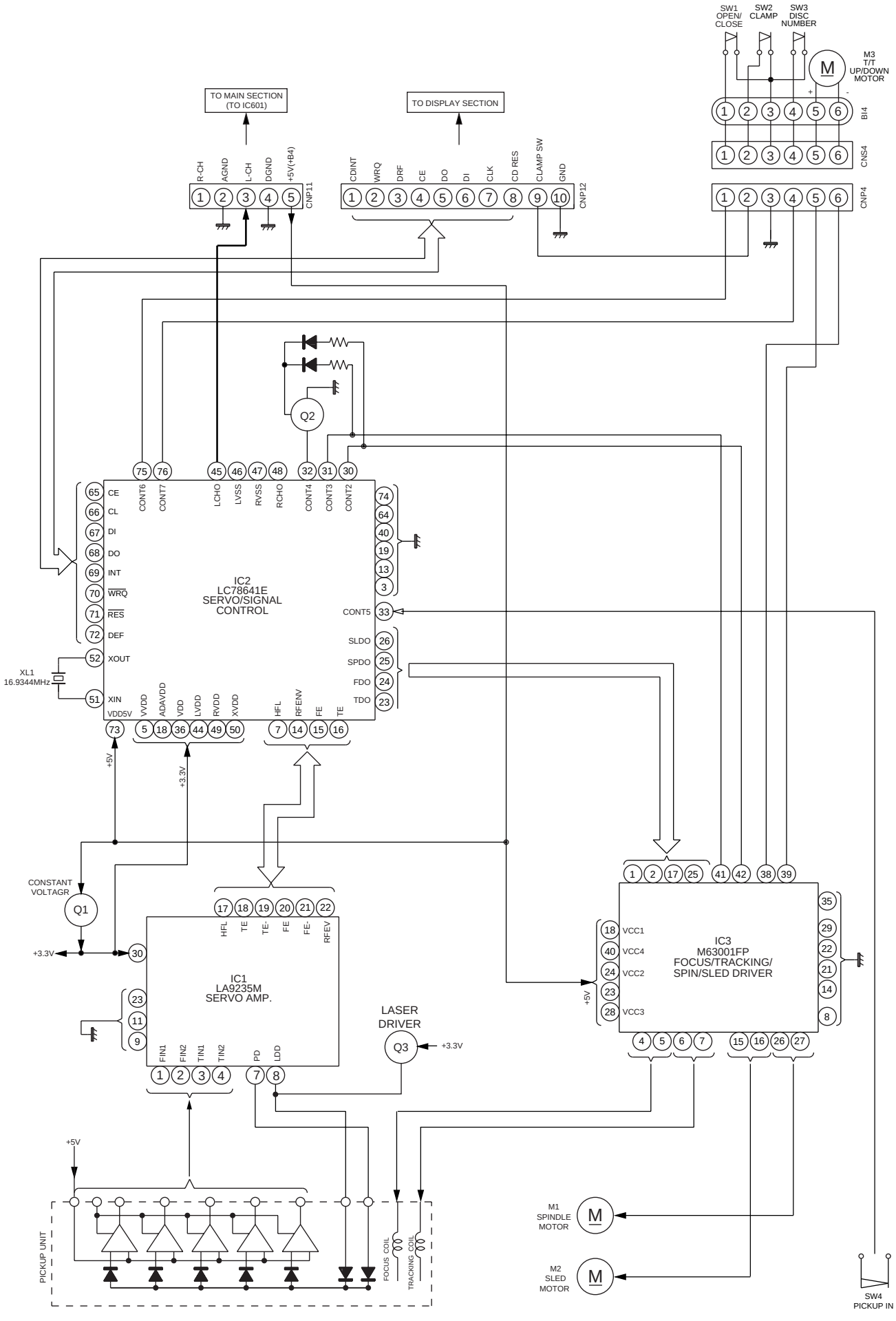


Figure 17 BLOCK DIAGRAM (1/3)

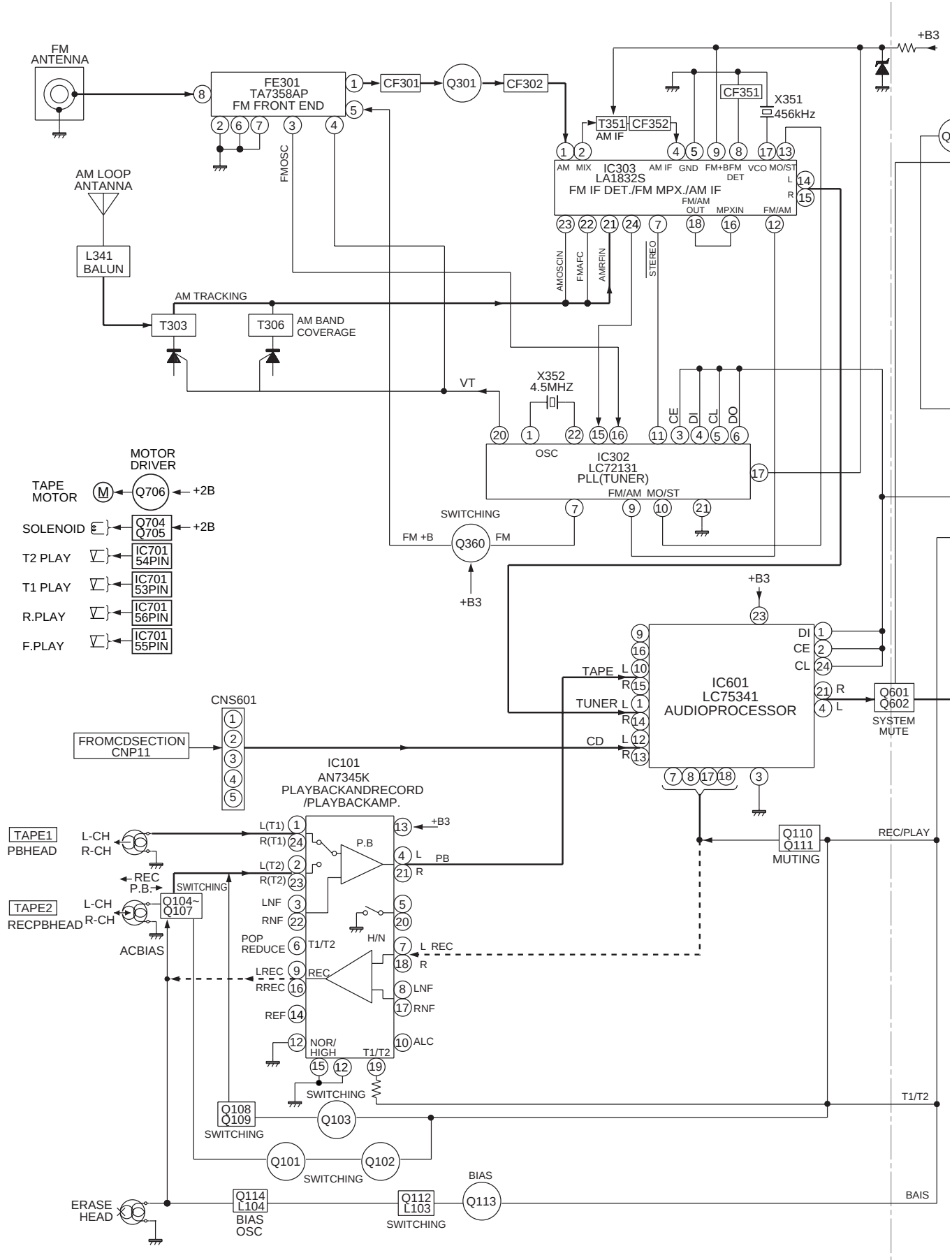


Figure 18 BLOCK DIAGRAM (2/3)

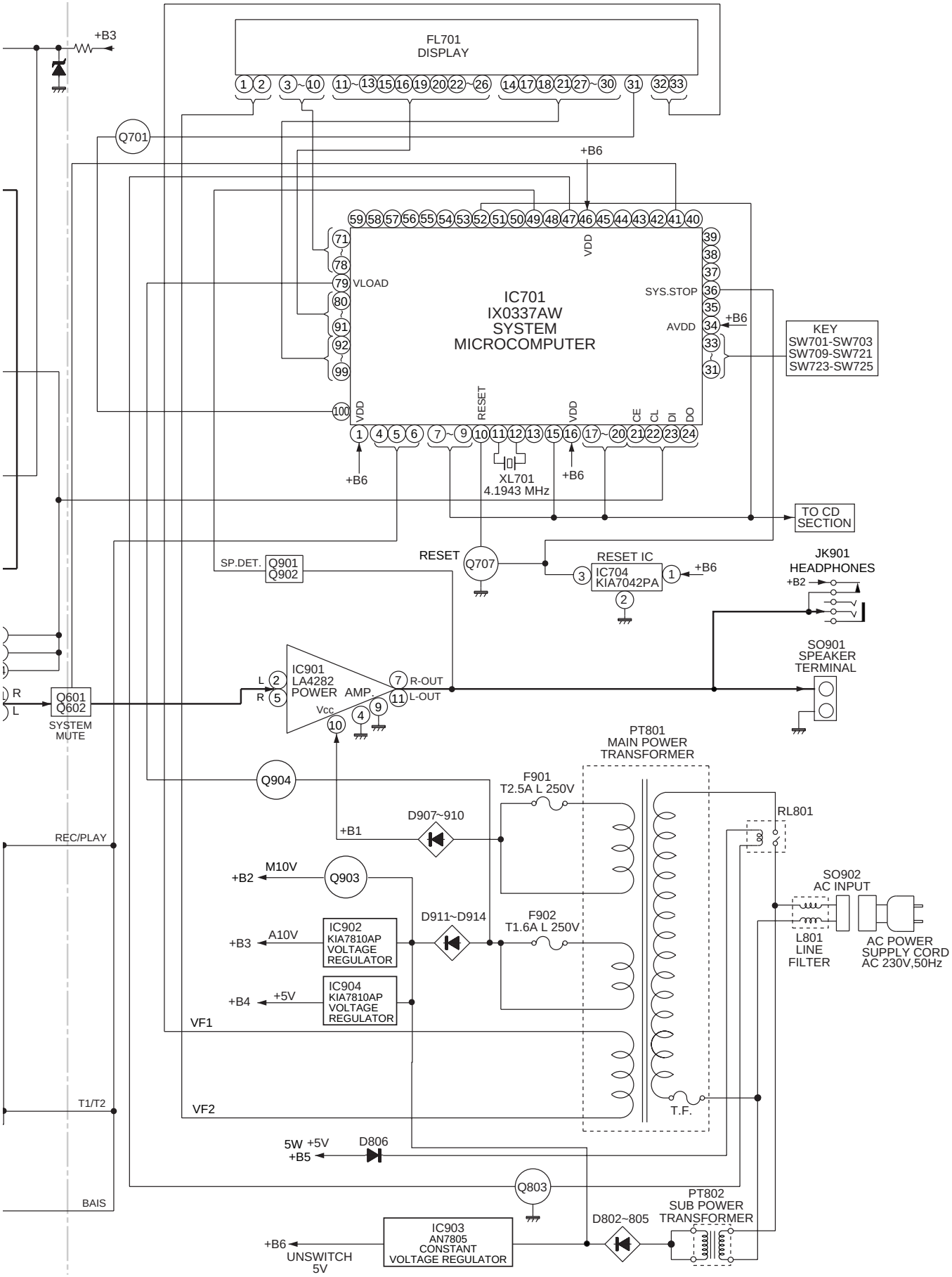


Figure 19 BLOCK DIAGRAM (3/3)

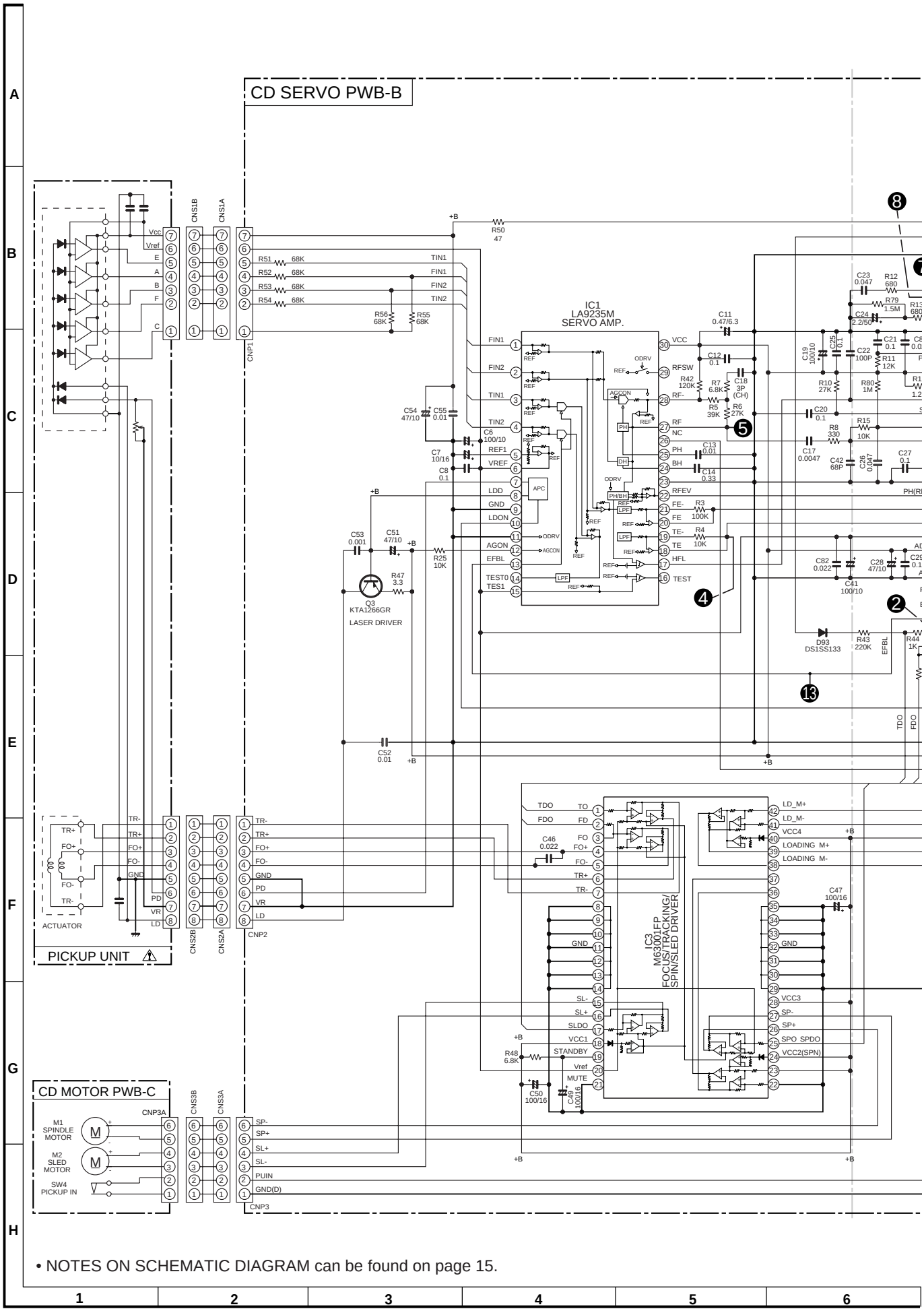
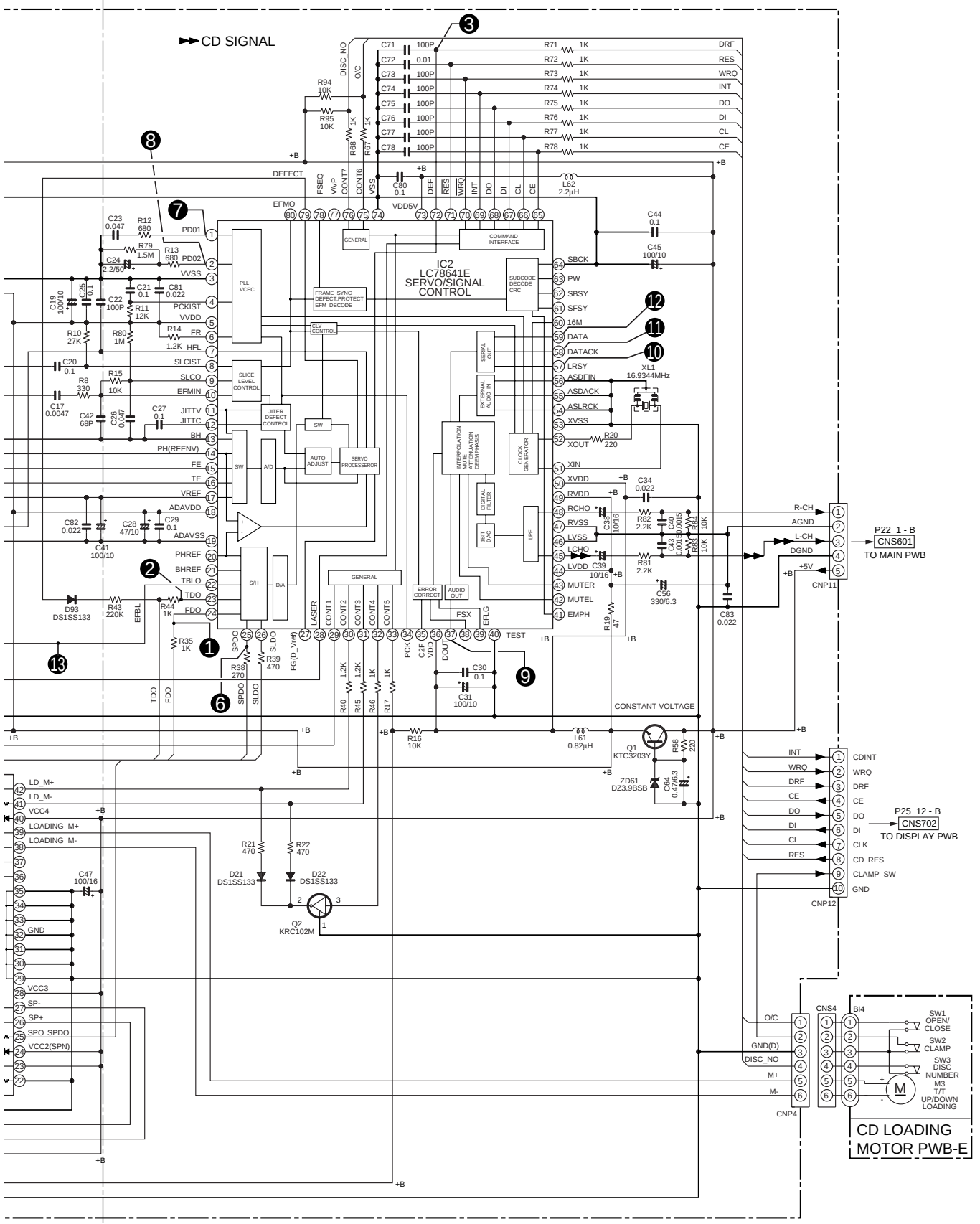


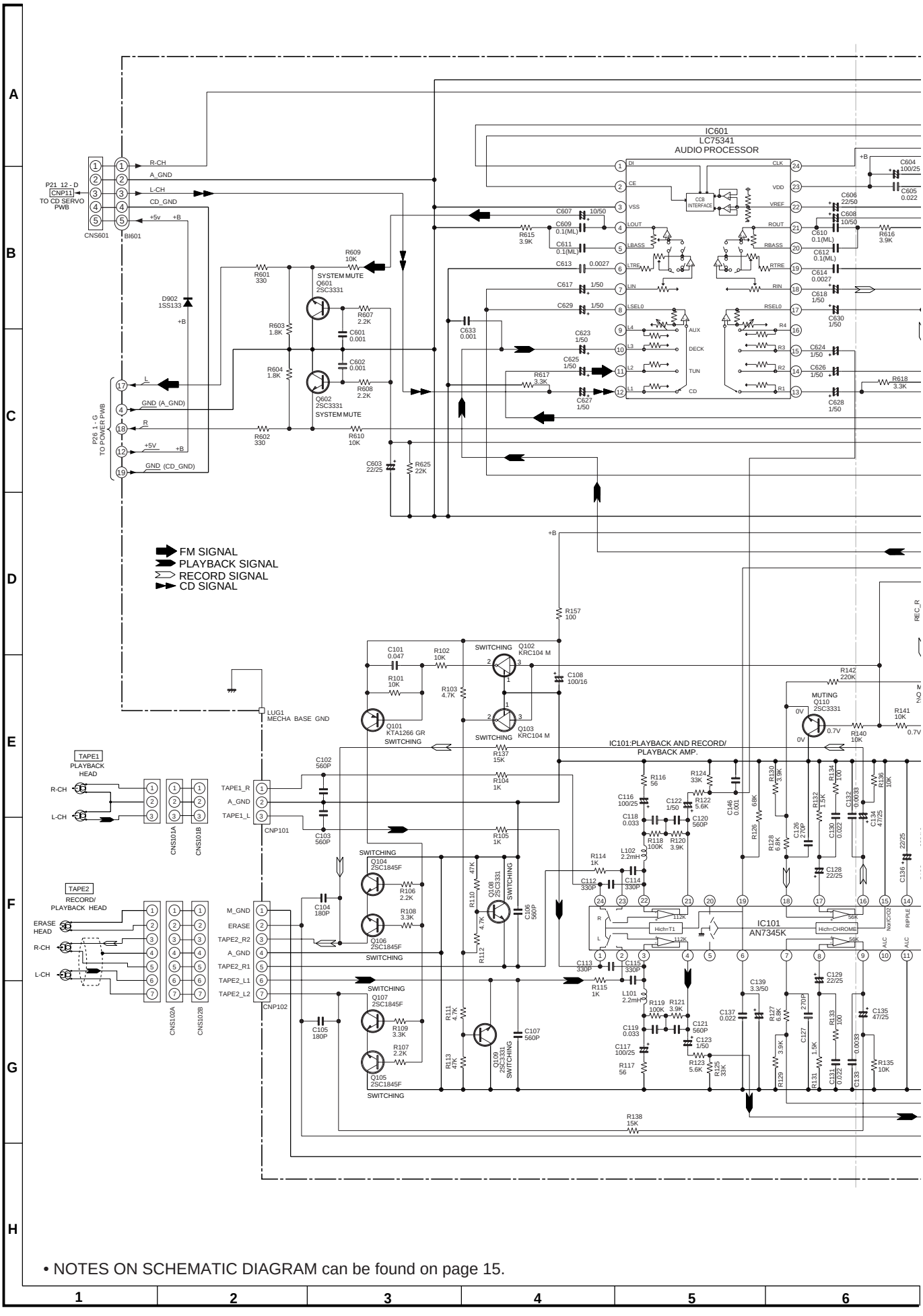
Figure 20 SCHEMATIC DIAGRAM (1/10)



• The numbers ❶ to ⓭ are waveform numbers shown in page 16.

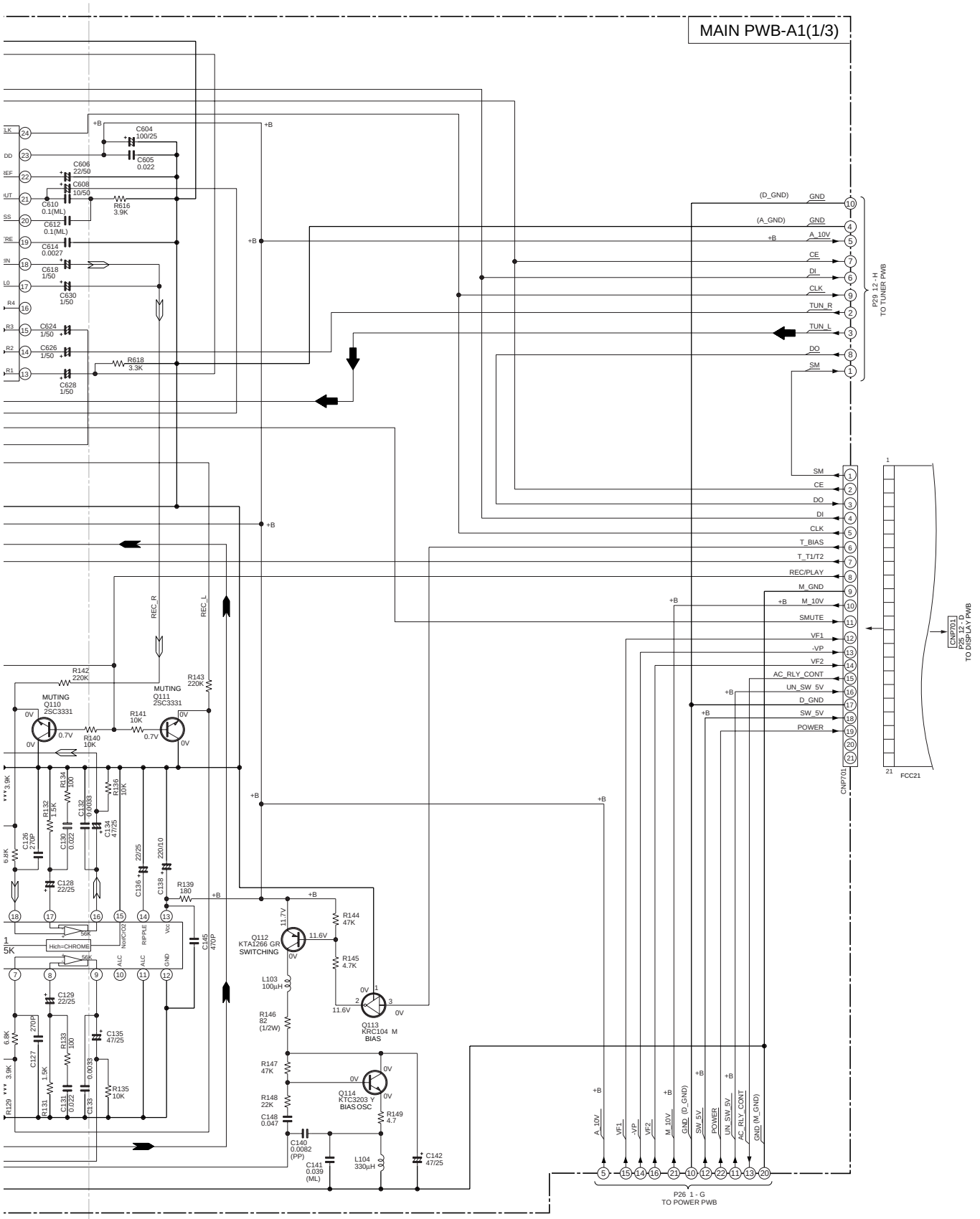
7	8	9	10	11	12

Figure 21 SCHEMATIC DIAGRAM (2/10)



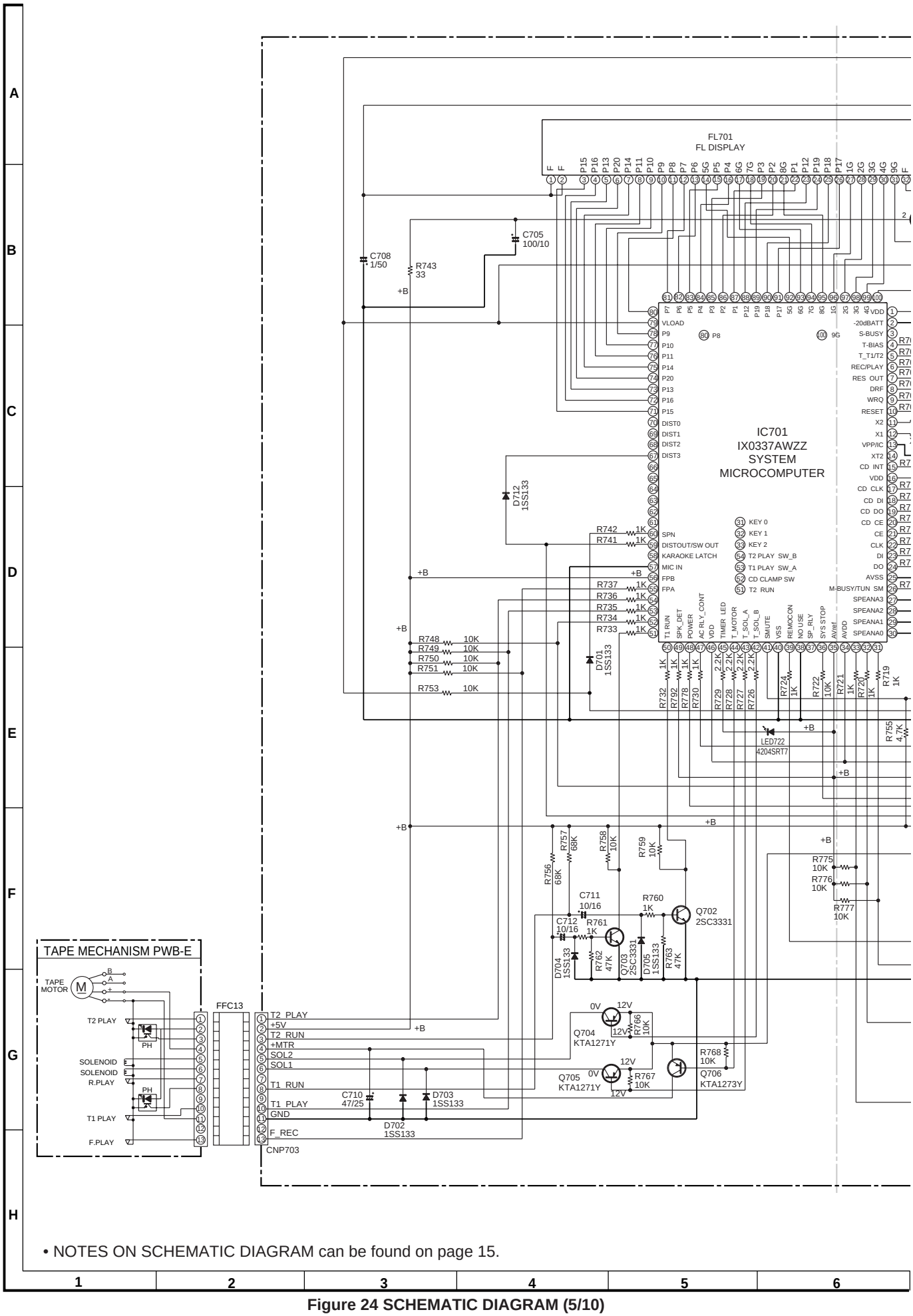
• NOTES ON SCHEMATIC DIAGRAM can be found on page 15.

Figure 22 SCHEMATIC DIAGRAM (3/10)



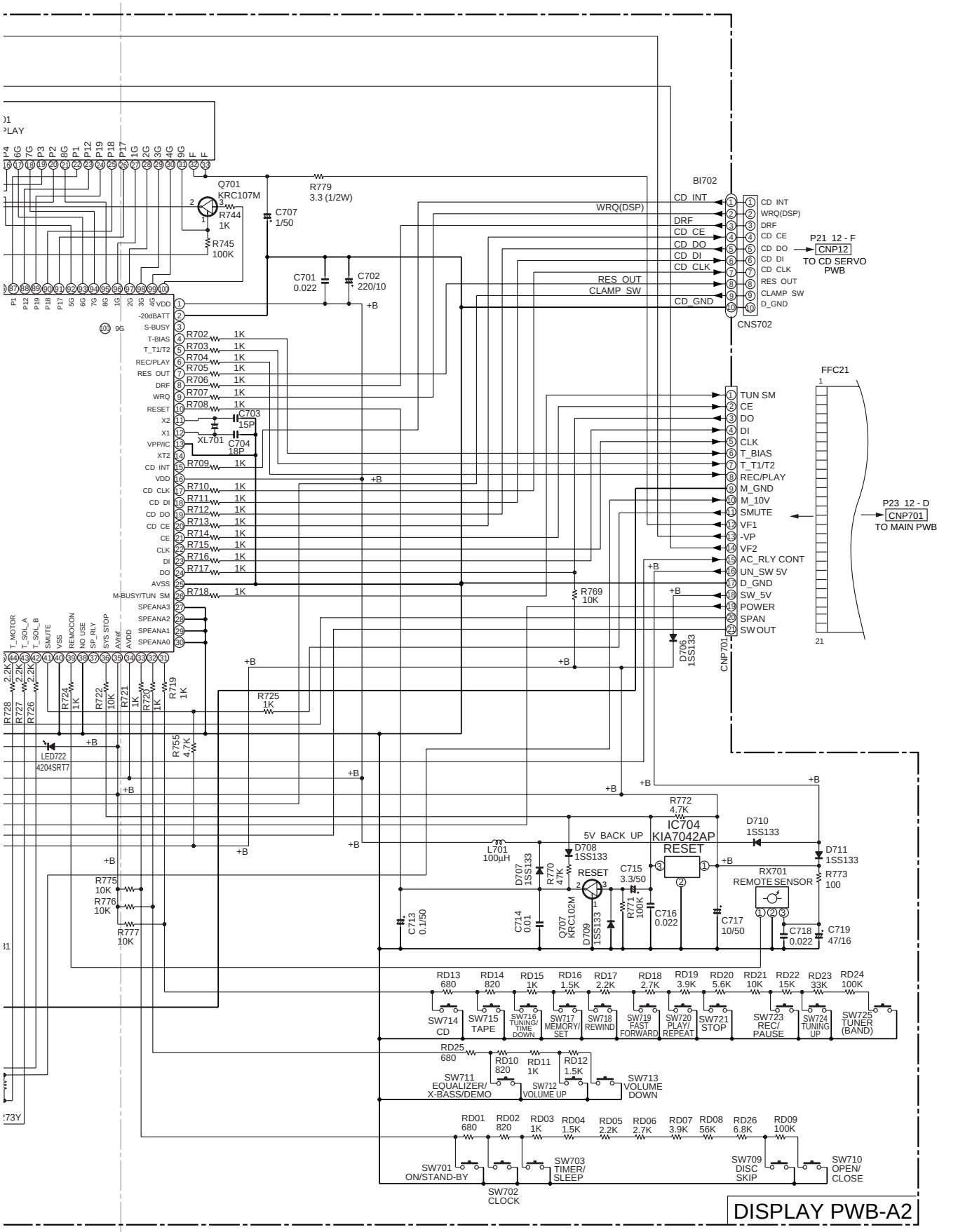
7	8	9	10	11	12

Figure 23 SCHEMATIC DIAGRAM (4/10)



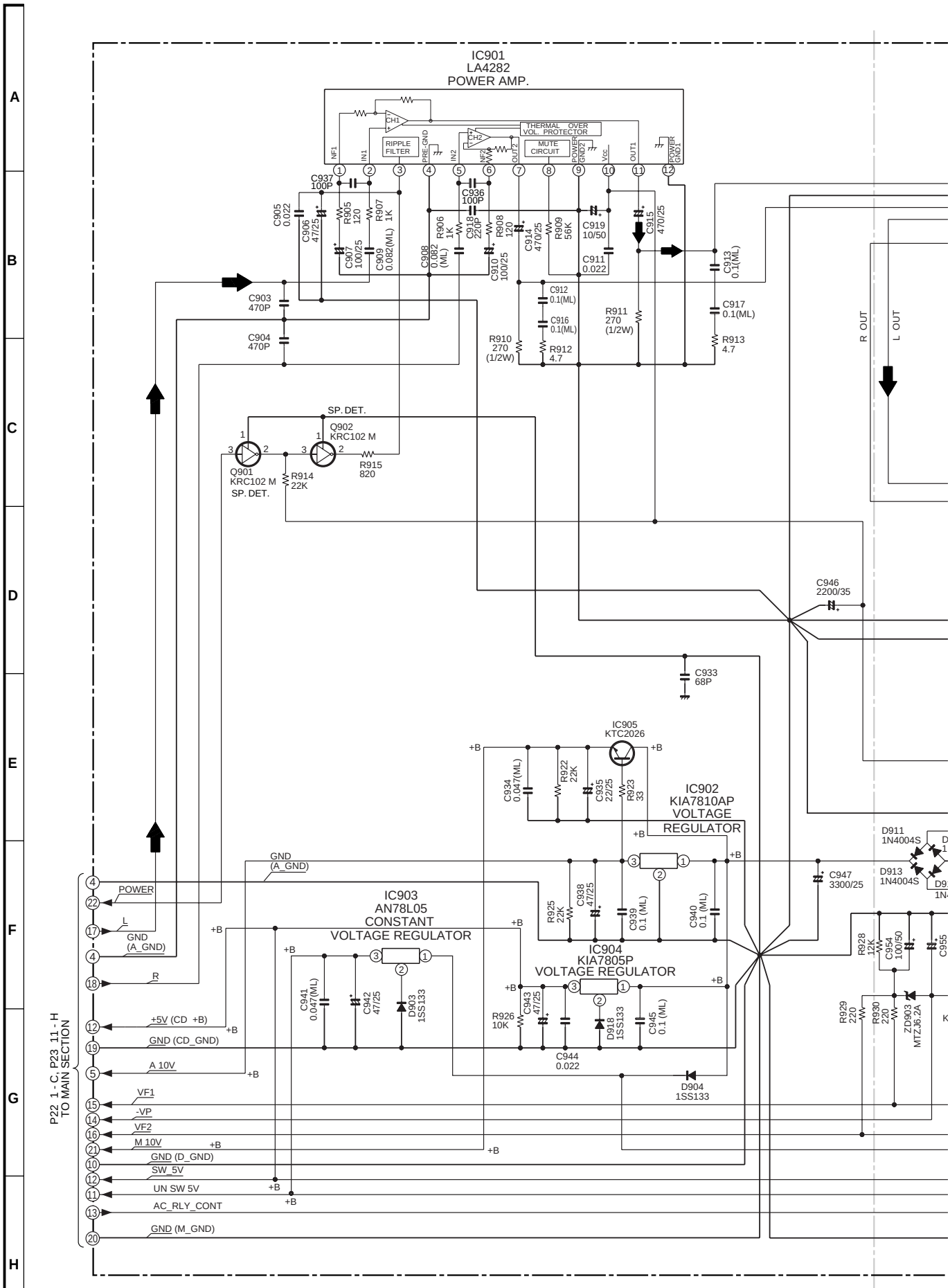
• NOTES ON SCHEMATIC DIAGRAM can be found on page 15.

Figure 24 SCHEMATIC DIAGRAM (5/10)



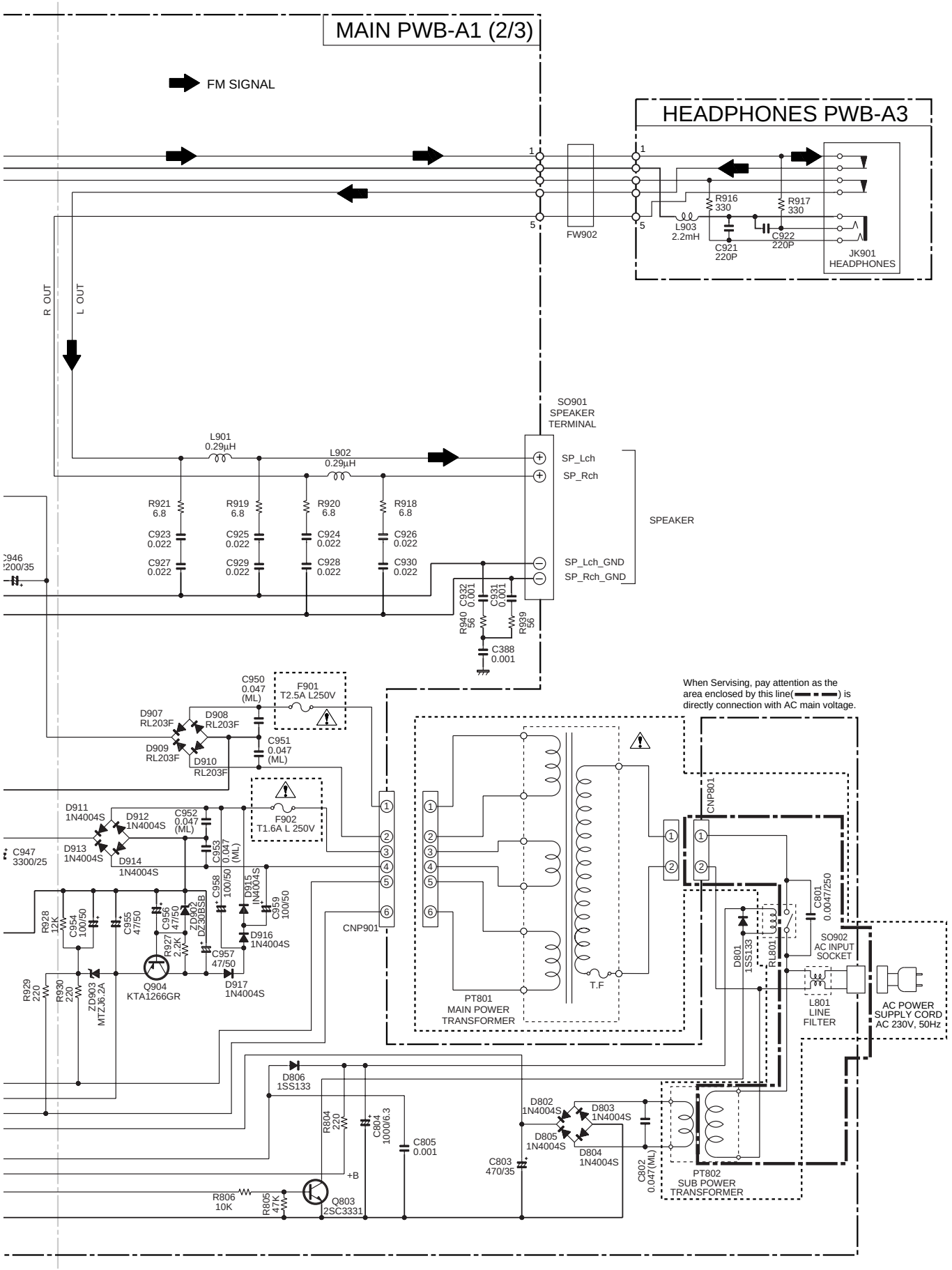
7	8	9	10	11	12

Figure 25 SCHEMATIC DIAGRAM (6/10)



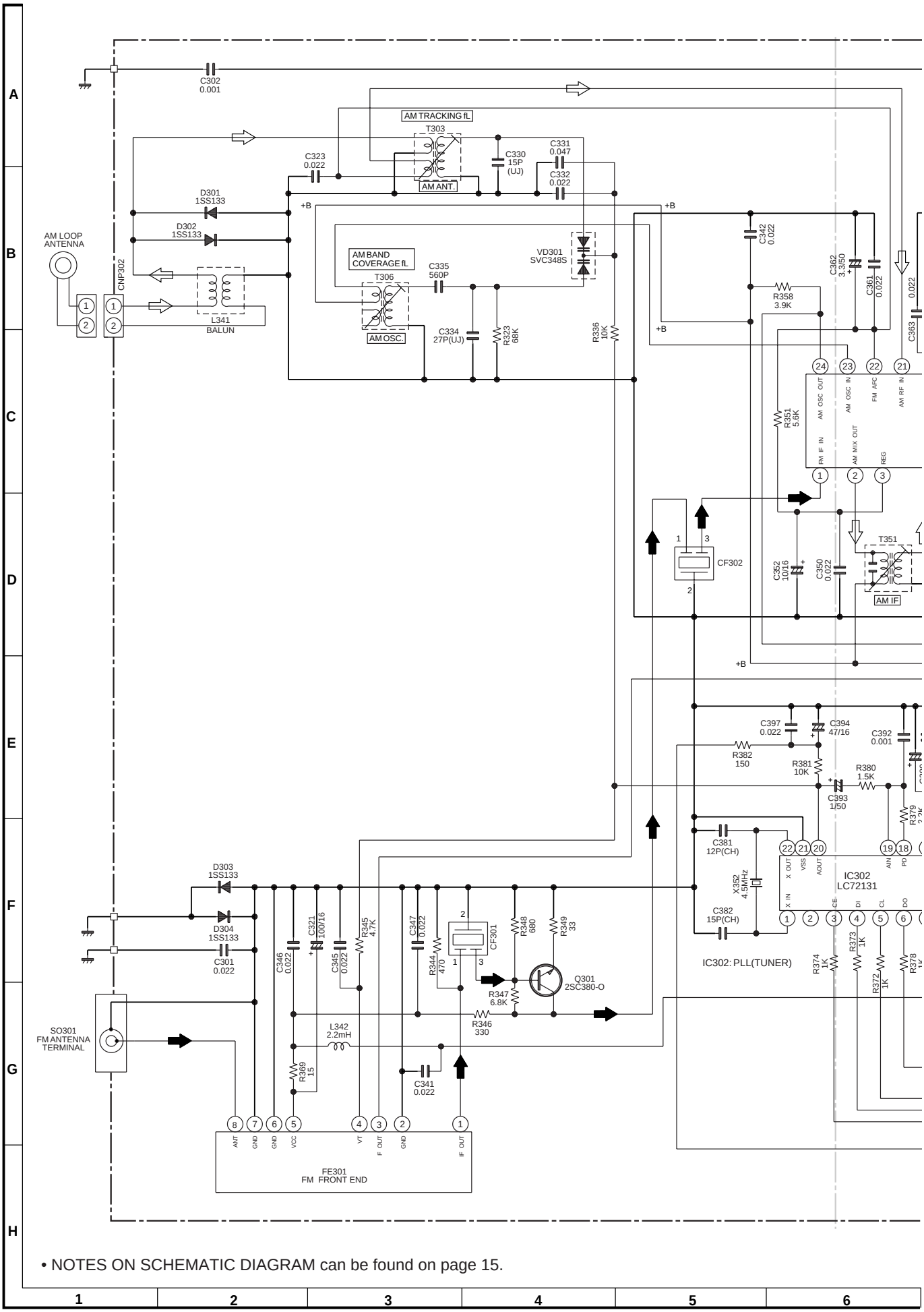
• NOTES ON SCHEMATIC DIAGRAM can be found on page 15.

Figure 26 SCHEMATIC DIAGRAM (7/10)



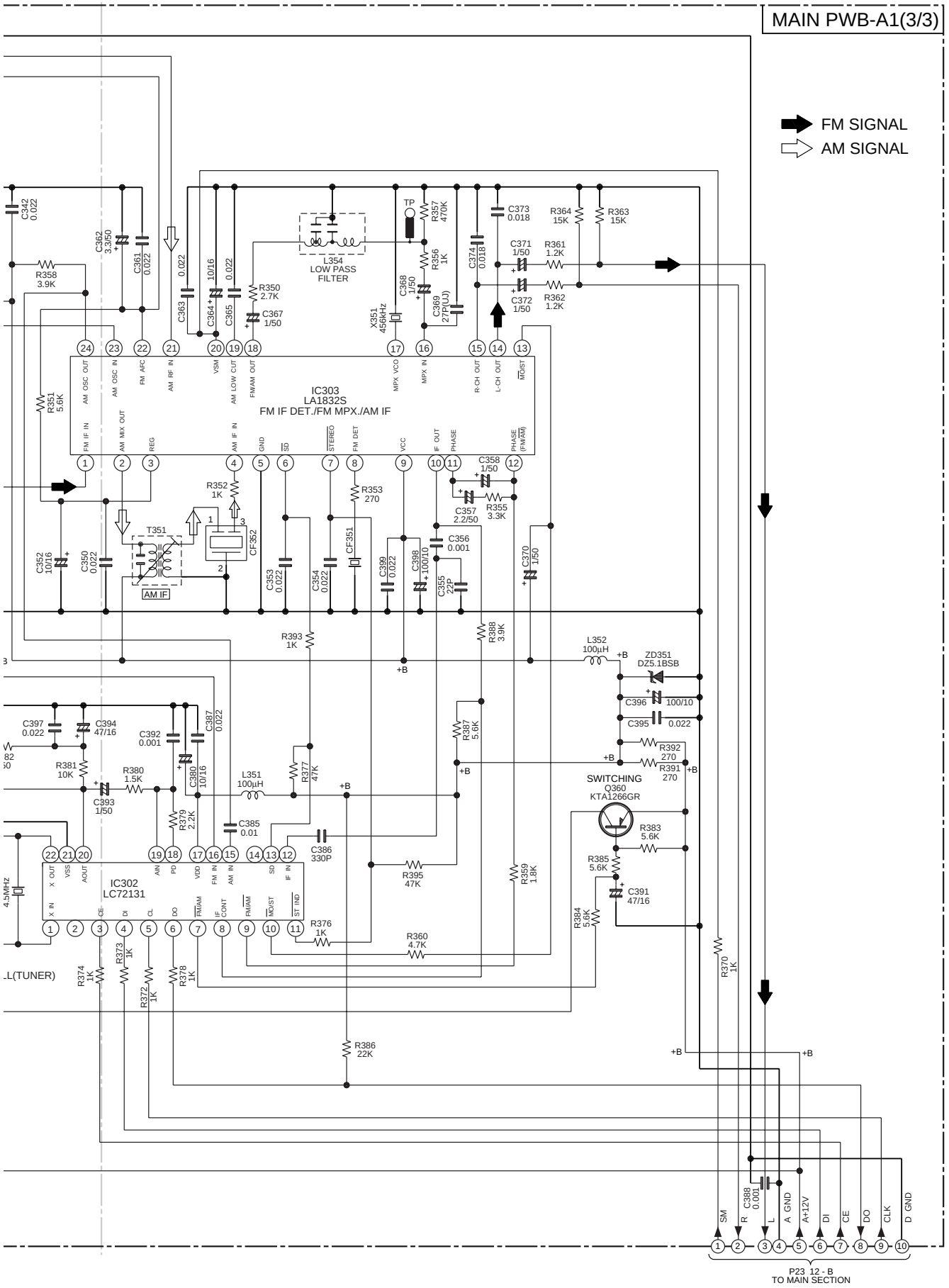
7	8	9	10	11	12

Figure 27 SCHEMATIC DIAGRAM (8/10)



• NOTES ON SCHEMATIC DIAGRAM can be found on page 15.

Figure 28 SCHEMATIC DIAGRAM (9/10)



7	8	9	10	11	12

Figure 29 SCHEMATIC DIAGRAM (10/10)

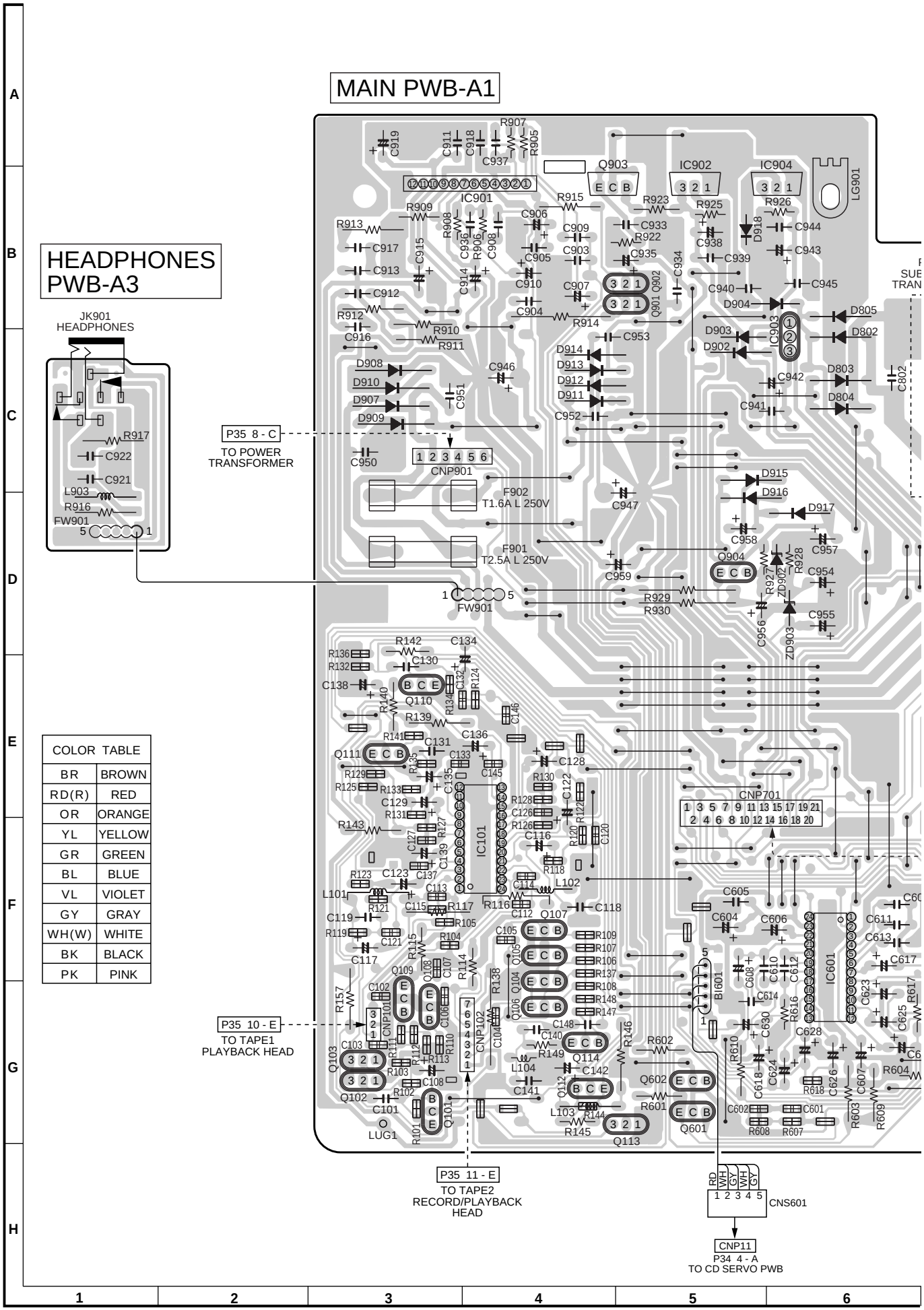
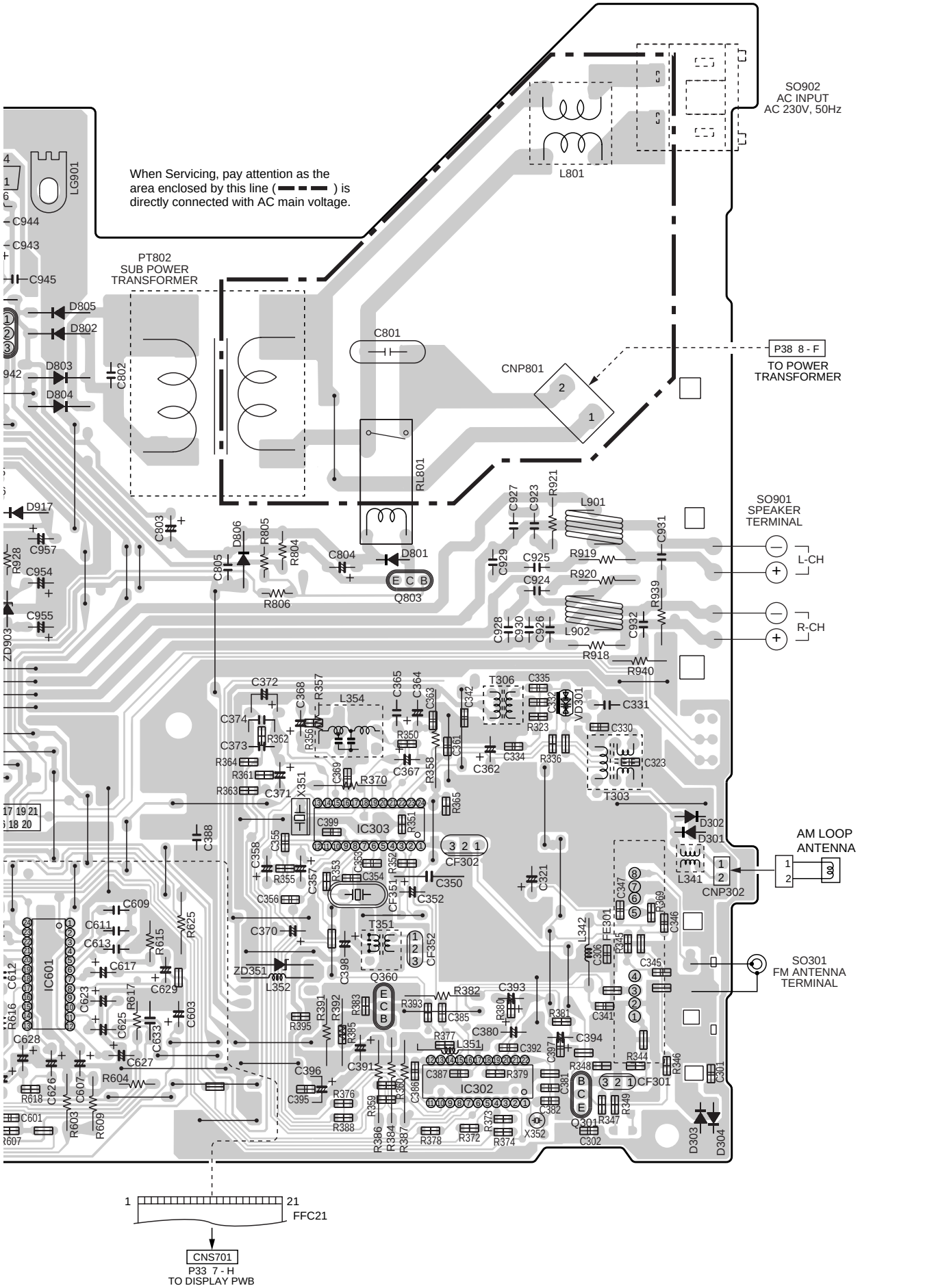


Figure 30 WIRING SIDE OF P.W.BOARD (1/6)



7	8	9	10	11	12

Figure 31 WIRING SIDE OF P.W.BOARD (2/6)

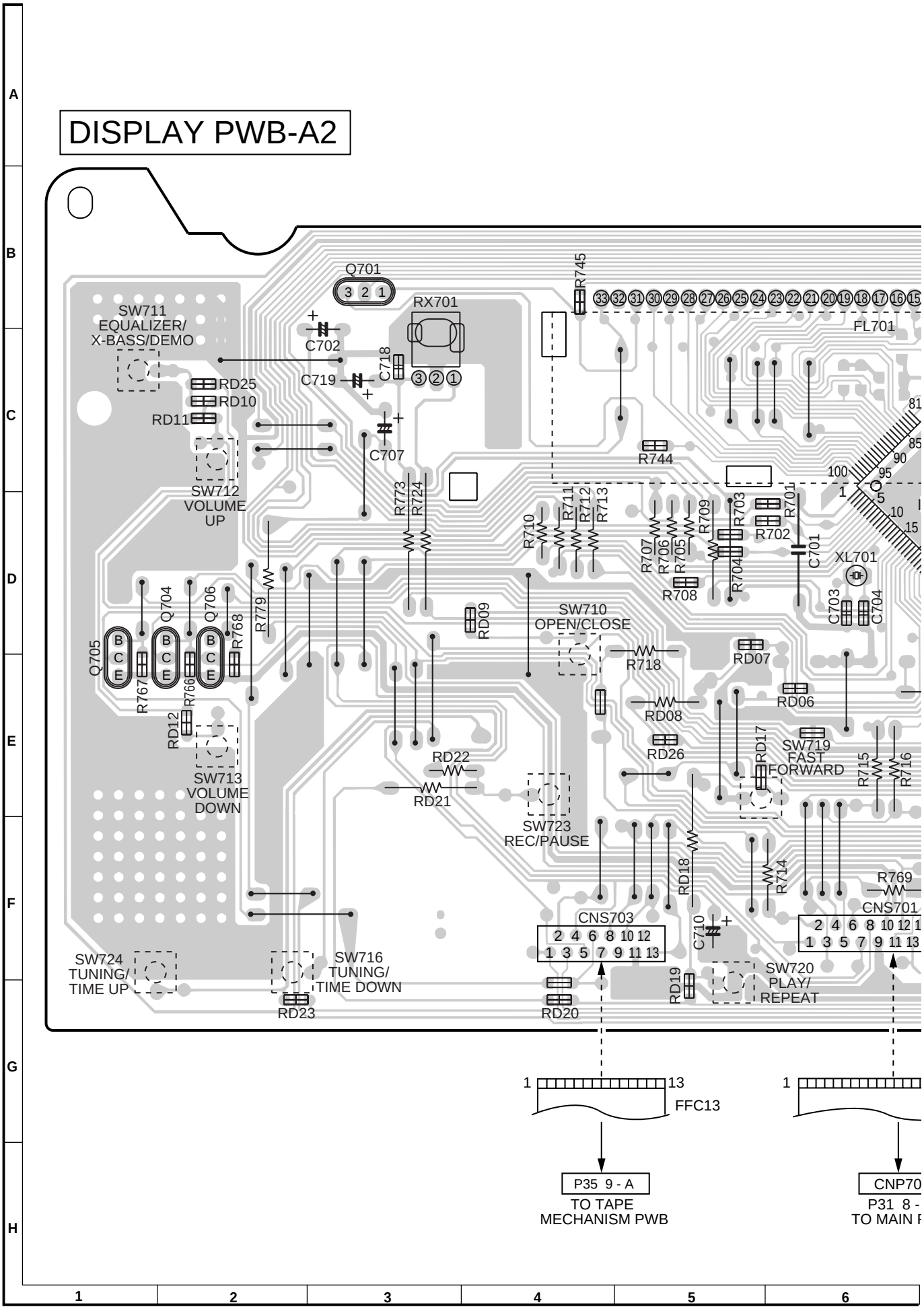
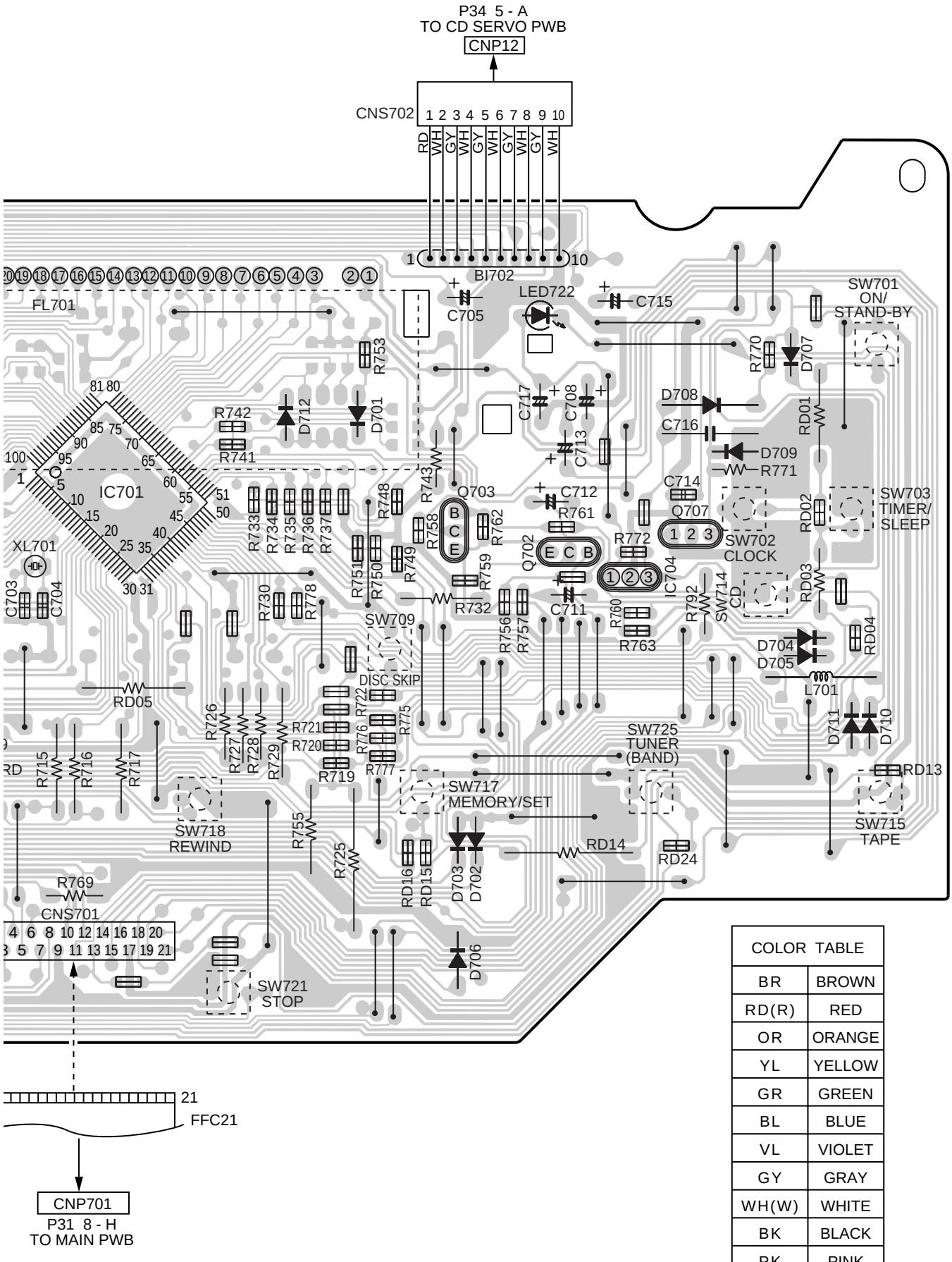


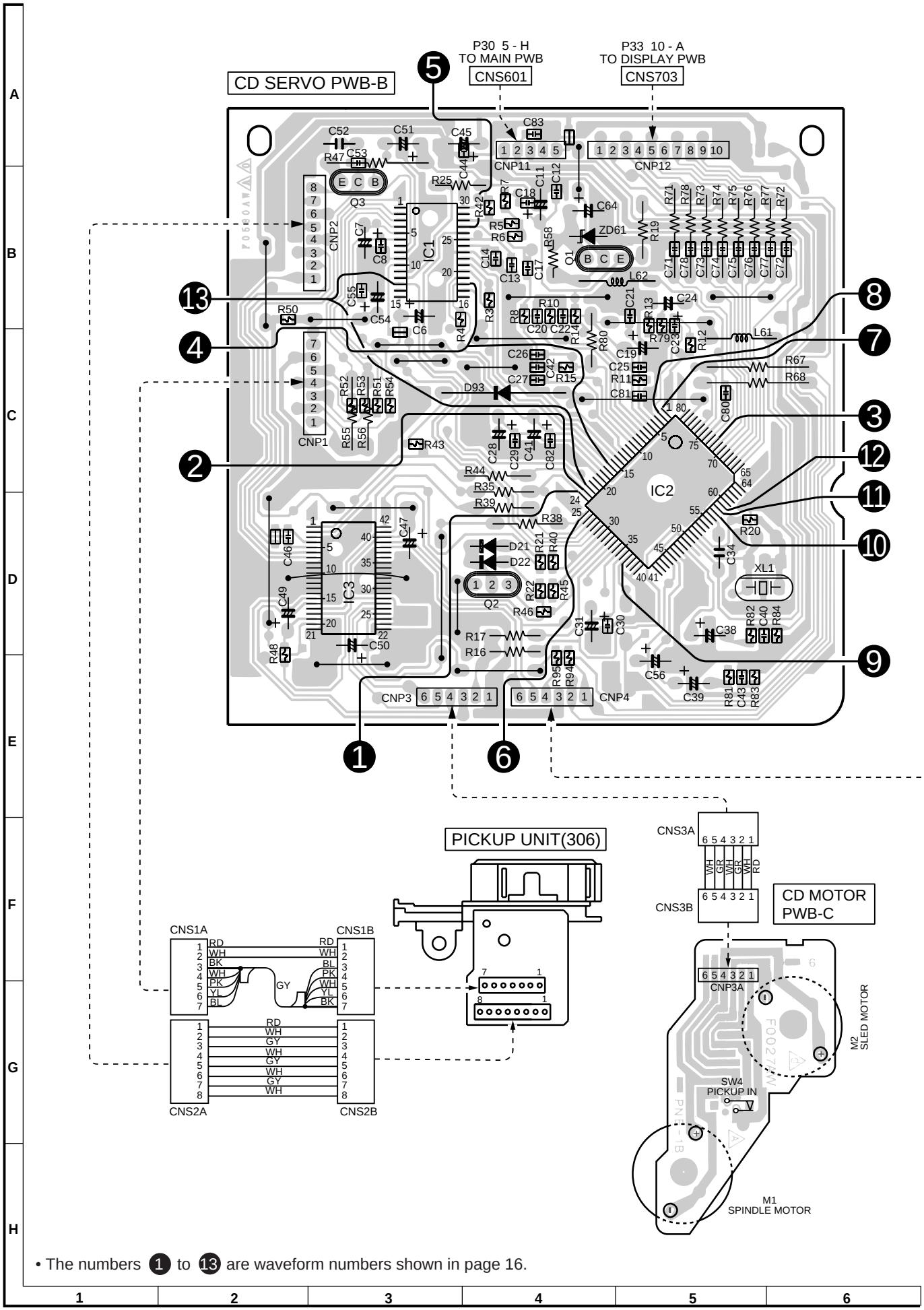
Figure 32 WIRING SIDE OF P.W.BOARD (3/6)



COLOR TABLE	
BR	BROWN
RD(R)	RED
OR	ORANGE
YL	YELLOW
GR	GREEN
BL	BLUE
VL	VIOLET
GY	GRAY
WH(W)	WHITE
BK	BLACK
PK	PINK

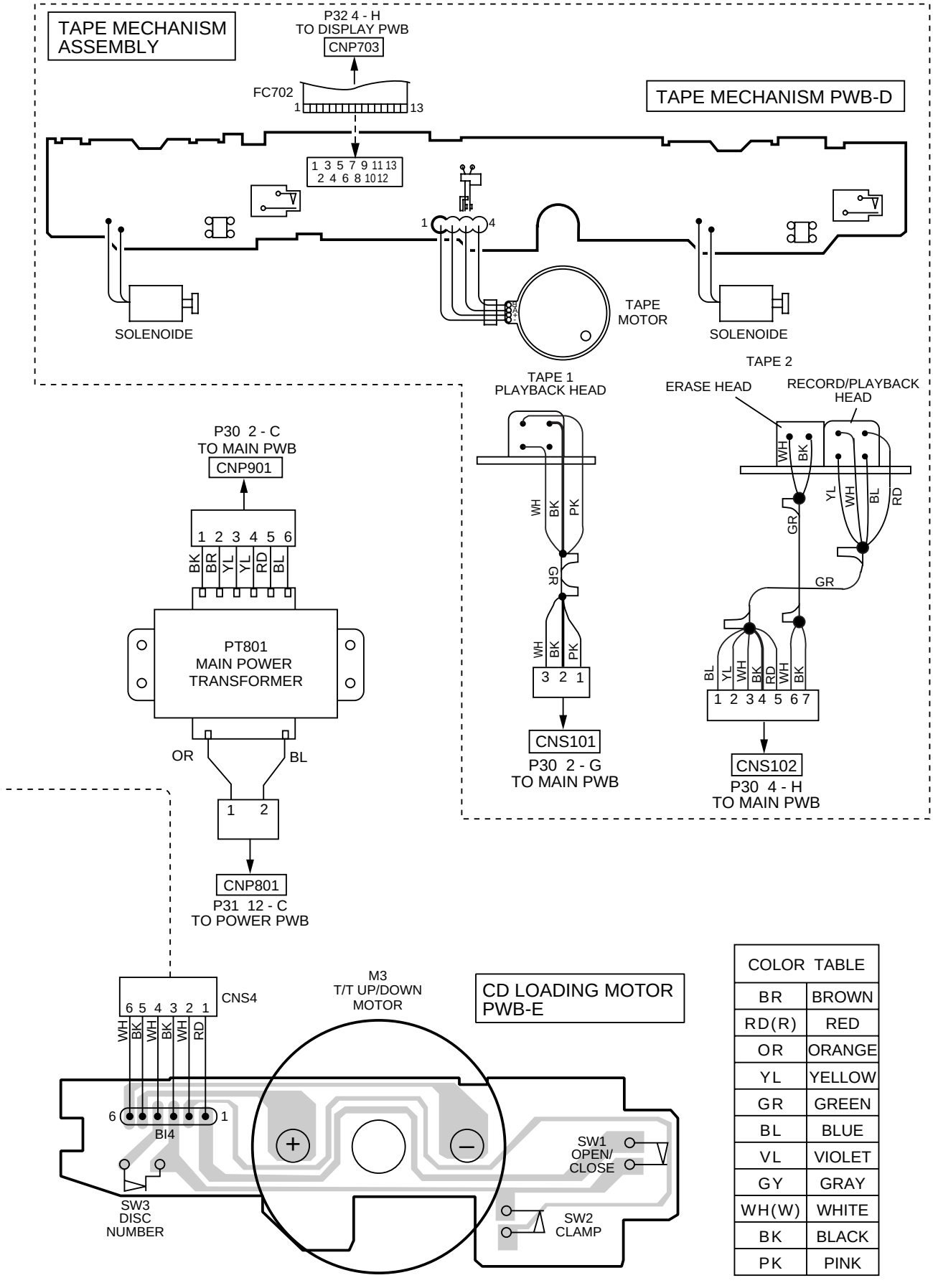
7	8	9	10	11	12

Figure 33 WIRING SIDE OF P.W.BOARD (4/6)



• The numbers ❶ to ⓭ are waveform numbers shown in page 16.

Figure 34 WIRING SIDE OF P.W.BOARD (5/6)



COLOR TABLE	
BR	BROWN
RD(R)	RED
OR	ORANGE
YL	YELLOW
GR	GREEN
BL	BLUE
VL	VIOLET
GY	GRAY
WH(W)	WHITE
BK	BLACK
PK	PINK

7	8	9	10	11	12

Figure 35 WIRING SIDE OF P.W.BOARD (6/6)

VOLTAGE

IC1	
PIN NO.	VOLTAGE
1	1.6V
2	1.6V
3	1.6V
4	1.6V
5	1.6V
6	1.6V
7	0V
8	2.6V
9	0V
10	0V
11	0V
12	3.3V
13	1.6V
14	1.6V
15	1.6V
16	0V
17	0V
18	1.6V
19	1.6V
20	1.6V
21	1.6V
22	1.6V
23	0V
24	1.6V
25	0V
26	0V
27	0V
28	1.6V
29	1.6V
30	3.3V

IC3	
PIN NO.	VOLTAGE
1	1.6V
2	1.6V
3	1.8V
4	2.1V
5	2.1V
6	2.1V
7	2.1V
8	0V
9	0V
10	0V
11	0V
12	0V
13	0V
14	0V
15	2.1V
16	2.1V
17	1.6V
18	4.9V
19	3.5V
20	1.6V
21	0V
22	0V
23	4.9V
24	4.9V
25	1.6V
26	2.1V
27	2.1V
28	1.9V
29	0V
30	0V
31	0V
32	0V
33	0V
34	0V
35	0V
36	4.2V
37	0V
38	2.1V
39	2.1V
40	4.9V
41	2.1V
42	2.1V

IC2	
PIN NO.	VOLTAGE
1	0.7V
2	0V
3	0V
4	0V
5	3.3V
6	2.4V
7	0V
8	0V
9	1.6V
10	0V
11	4.7V
12	1.7V
13	0V
14	1.6V
15	1.6V
16	1.6V
17	1.6V
18	3.3V
19	0V
20	1.6V
21	1.6V
22	1.6V
23	1.6V
24	1.6V
25	1.6V
26	1.6V
27	1.6V
28	0V
29	0V
30	2.1V
31	2.1V
32	0V
33	3.3V
34	3.5V
35	3.3V
36	3.3V
37	3.3V
38	1.6V
39	1.6V
40	0V
41	0V
42	3.3V
43	3.3V
44	3.0V
45	1.5V
46	0V
47	0V
48	1.5V
49	3.0V
50	3.3V
51	1.8V
52	3.0V
53	0V
54	0V
55	0V
56	0V
57	1.7V
58	3.3V
59	0V
60	3.0V
61	1.6V
62	0V
63	2.4V
64	0V
65	0V
66	0V
67	0V
68	4.8V
69	4.9V
70	4.9V
71	4.6V
72	0V
73	4.9V
74	0V
75	0V
76	0V
77	3.2V
78	0V
79	0V
80	3.4V

IC101	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0.55V
4	2.16V
5	0V
6	1.25V
7	0V
8	0.58V
9	3.17V
10	3.55V
11	0V
12	0V
13	4.72V
14	4.37V
15	0V
16	3.67V
17	0.38V
18	0V
19	0V
20	0V
21	2.16V
22	0.55V
23	0V
24	0V

IC301	
PIN NO.	VOLTAGE
1	0.8V (0V)
2	1.5V (0V)
3	3.6V (0.4V)
4	1.5V (0V)
5	0V (0V)
6	3.6V (0.4V)
7	2.8V (0.2V)
8	3.5V (0.3V)
9	3.6V (0.3V)

IC302	
PIN NO.	VOLTAGE
1	2.15V
2	0V
3	0V
4	0V
5	0V
6	4.83V
7	9.87V
8	4.4V
9	0V
10	0V
11	4.64V
12	2.27V
13	4.66V
14	0V
15	2.13V
16	0V
17	4.86V
18	0.73V
19	0.73V
20	6.3V
21	0V
22	2.33V

IC901	
PIN NO.	VOLTAGE
1	0V
2	0V
3	16.27V
4	0V
5	0V
6	0V
7	16.72V
8	0V
9	0V
10	34.2V
11	16.6V
12	0V

IC902	
PIN NO.	VOLTAGE
1	19.12V
2	0V
3	10.04V

IC904	
PIN NO.	VOLTAGE
1	19.12V
2	0.64V
3	5.64V

Q903	
PIN NO.	VOLTAGE
1	10.04V
2	19.05V
3	9.57V

IC704	
PIN NO.	VOLTAGE
1	4.9V
2	0V
3	4.9V

IC601	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	4.96V
5	4.96V
6	4.96V
7	4.96V
8	4.89V
9	4.78V
10	4.78V
11	4.78V
12	4.78V
13	4.78V
14	4.78V
15	4.78V
16	4.78V
17	5.1V
18	5.5V
19	5.0V
20	4.66V
21	5.03V
22	4.97V
23	10.0V
24	0V

IC701			
PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	4.78V	51	4.29V
2	0V	52	0V
3	5.0V	53	4.81V
4	0V	54	4.81V
5	4.69V	55	4.81V
6	4.74V	56	4.81V
7	4.75V	57	0V
8	0V	58	0V
9	4.85V	59	27.8V
10	4.30V	60	–27.8V
11	2.25V	61	0V
12	1.16V	62	0V
13	0V	63	0V
14	0V	64	0V
15	4.85V	65	0V
16	4.78V	66	0V
17	4.67V	67	–27.7V
18	0V	68	–27.7V
19	4.69V	69	–27.1V
20	0V	70	–28.2V
21	0V	71	–21.7V
22	0V	72	–18.6V
23	0V	73	–12.9V
24	4.82V	74	–24.4V
25	0V	75	–25.9V
26	0.3V	76	–15.7V
27	0V	77	–22.2V
28	0V	78	–22.3V
29	0V	79	–27.8V
30	0V	80	–18.6V
31	4.81V	81	–12.9V
32	4.81V	82	–24.4V
33	4.81V	83	–24.4V
34	4.9V	84	–27.1V
35	5.0V	85	–27.1V
36	4.9V	86	–24.4V
37	0V	87	–24.4V
38	0V	88	–27.1V
39	5.0V	89	–27.1V
40	0V	90	–24.4V
41	1.7V	91	–27.1V
42	9.45V	92	–24.4V
43	9.45V	93	–27.1V
44	9.45V	94	–24.4V
45	3.8V	95	–24.4V
46	4.89V	96	–24.4V
47	0V	97	–24.4V
48	4.89V	98	–24.4V
49	4.79V	99	–24.4V
50	4.78V	100	–24.4V

IC303	
PIN NO.	VOLTAGE
1	2.12V
2	4.78V
3	2.12V
4	2.11V
5	0V
6	4.65V
7	4.65V
8	3.02V
9	4.78V
10	4.08V
11	1.63V
12	1.13V
13	2.08V
14	1.31V
15	1.29V
16	2.07V
17	0V
18	1.43V
19	1.99V
20	1.44V
21	2.08V
22	2.08V
23	4.48V
24	3.35V

TROUBLE SHOOTING

When the CD does not function

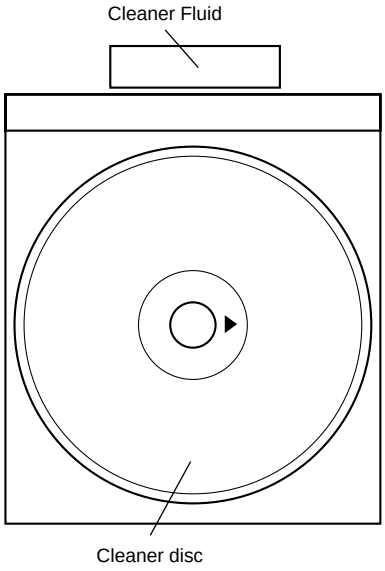
When the CD section does not operate when the objective lens of the optical pickup is dirty, this section may not operate. Clean the objective lens, and check the playback operation. When this section does not operate even after the above step is taken, check the following items.
Remove the cabinet and follow the trouble shooting instructions.
"Track skipping and/or no TOC (Table Of Contents) may be caused by build up of dust other foreign matter on the laser pickup lens. Before attempting any adjustment make certain that the lens is clean. If not, clean it as mentioned below."

Turn the power off.
Gently clean the lens with a lens cleaning tissue and a small amount of isopropyl alcohol.
Do not touch the lens with the bare hand.

		Parts code
1.	CD optical pickup Lens cleaner disc	UDSKA0004AFZZ

HOW TO USE

1. Using the brush in the cleaner cap, apply 1 or 2 drops of the cleaning fluid to the brush on the CD cleaner disc which has the mark next to it.
2. Place the CD cleaner disc onto the CD disc tray with the brush side down, then press the play button.
3. You will hear music for about 20 seconds and the CD player will automatically stop. If it continuous to turn, press the stop button.



CAUTION

- The CD lens cleaner should be effective for 30-50 operations, however if the brushes become worn out earlier then please the cleaner disc.
- If the CD cleaner brushes become very wet then wipe off any excess fluid with a soft cloth.
- Do not drink the cleaner fluid or allow it to come in contact with the eyes. In the event of this happening then drink and / or rinse with clean water and seek medical advice.
- The CD cleaner disk must not be used on car CD players or on computer CD ROM drives.
- All rights reserved. Unauthorized duplicating, broadcasting and renting this product

When a CD cannot be played

1. "E-CD01" is displayed.

(1) Check the power to IC2 (LC78641E), the presence of the clock signal (16.93 MHz) and the status of the RESET terminal (pin 71 on IC2).
(2) Did the pickup move to the PICKUP-IN Switch (SW4) position?

If (1) and (2) are OK, check the system microcomputer (especially the communication line with the DSP).

2. Pressing the CD operation key is accepted, but playback does not occur.

(1) Focus-HF system check
(2) Tracking system check
(3) Spin system check
(4) PLL system check
(5) Others

(1) Focus-HF system check

Although a CD is inserted and the cover is closed, "NO DISC" is displayed.

Press the OPEN/CLOSE switch (SW1) without inserting a disc, and try starting the playback operation.

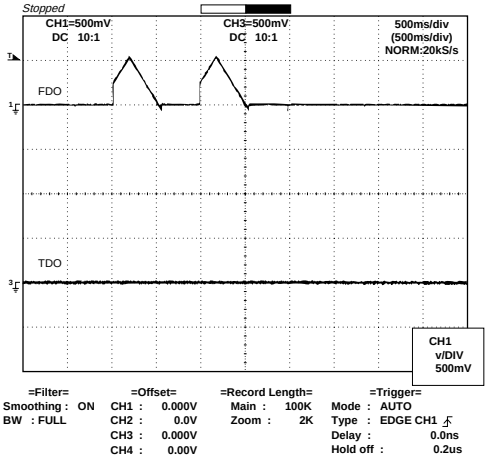


Figure 38-1

1. Did the pickup move to the PICKUP-IN Switch (SW4) position?
   - No → Sled motor (M2)
   - Yes ↓
2. Does the focus (lens) move up and down? (Waveform drawing 38-1).
   - No → Check the focus peripheral circuit.
   - Yes ↓
3. Is the laser lit?
   - No → Check the laser diode driver Q3 peripheral circuit.
   - Yes ↓
4. Is the turntable rotating?
   - No → Spindle motor (M1).

When a disc is loaded, start playback operation.

1. Is focus servo activated? (Waveform drawing 38-2)
   - No → Pins 1~11 on IC1
     Check the laser diode driver Q3 peripheral circuit.
     Focus error circuit (pins 20 and 21 on IC1)
   - Yes ↓
2. Does DRF change from "L" to "H"?
   - No → Is the disc rotating?
     - No → Check the spin system.
     - Yes → If the disc is spinning and a HF waveform is generated, DRF will go H.
   - Yes ↓
3. Is the HF waveform normal? (Waveform drawing 38-3)
   - No → If the level is not normal, check around pins 27~29 on IC1.

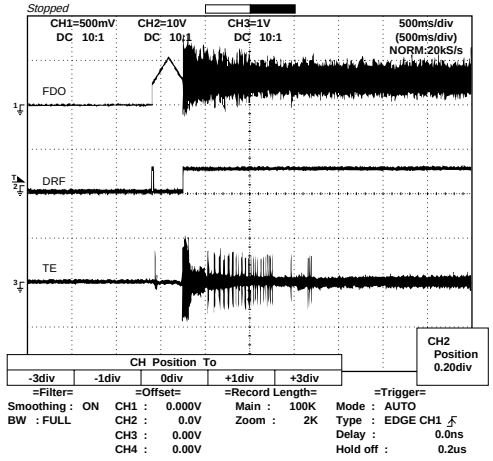


Figure 38-2

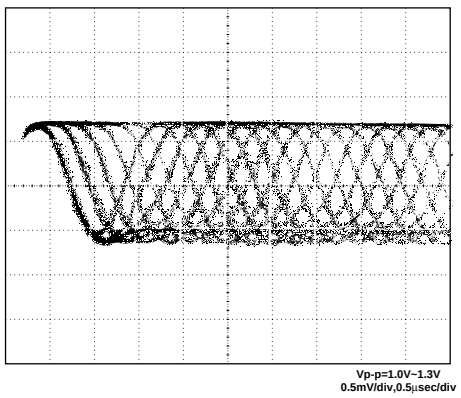


Figure 38-3

(2) Tracking system check

Check the TE waveform at pin 18 on IC1.

If the waveform shown in Figure 39-1 appears and soon after NO DISC appears.
- Yes → The tracking servo is not activated. Check the peripheral circuits at pins 18 and 19 on IC1, pin 23 on IC2, and CNS1A/B.
- No ↓

"Initialization" is possible, but play is not possible.
- Yes → A normal jump operation cannot be completed or the beginning of the track cannot be found. Check the around pin 23 on IC2.
- No ↓

"Initialization" is not possible. → Data cannot be read. Check the VCO-PLL system.

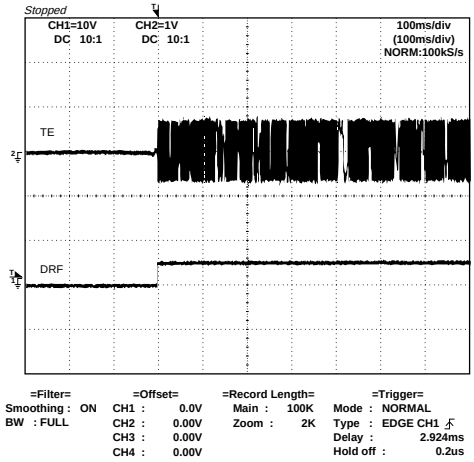


Figure 39-1

(3) Spin system check

Press the OPEN/CLOSE switch without inserting a disc, and then try starting the play operation.

1. The turntable rotates a little. (Waveform drawing 39-2)
- Yes → The spin driver circuit is OK.
- No ↓

2. The turntable doesn't rotate. → Check around pin 25 on IC2, pins 15 and 16 on IC3, and CNS3A/B.

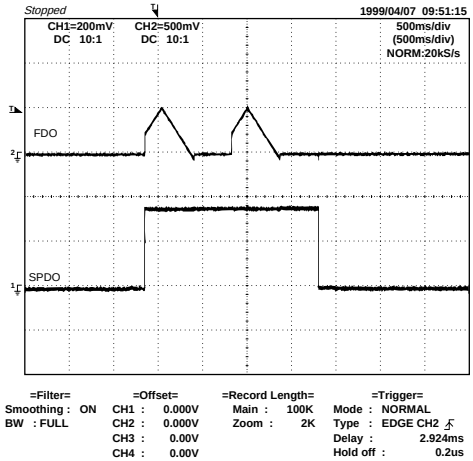


Figure 39-2

(4) PLL system check

When a disc is loaded, start play operation.

↓

The HF waveform is normal, but the TOC data cannot be read.

↓

Check the PDO waveform. (Figure 40-1)

↓

Check around pins 1~6 on IC2.

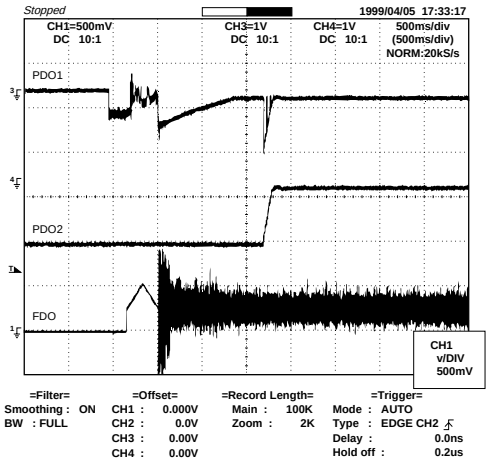


Figure 40-1

(5) Others

The HF waveform is normal and the time is displayed normally, but no sound is produced. Or the sound has dropouts.

Is pin 35 (C2F) on IC2 "L"?

No → There are too many error flags on a damaged disc which makes error correction impossible.

↓

Check again using a known good disc.

Yes

↓

1. When playing at normal speed
   Check the peripheral circuit at pin 37 (DOUT) on IC2 and the waveform (Figure 40-2).

↓

If both 1. and 2. are OK.

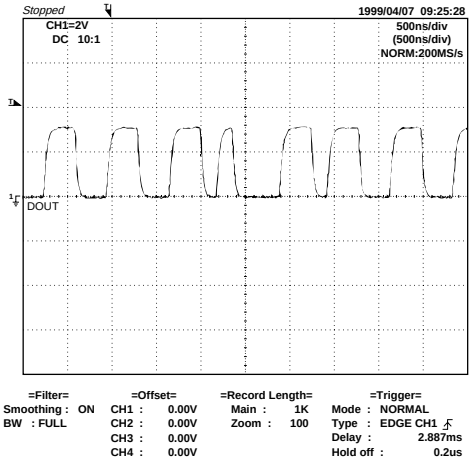
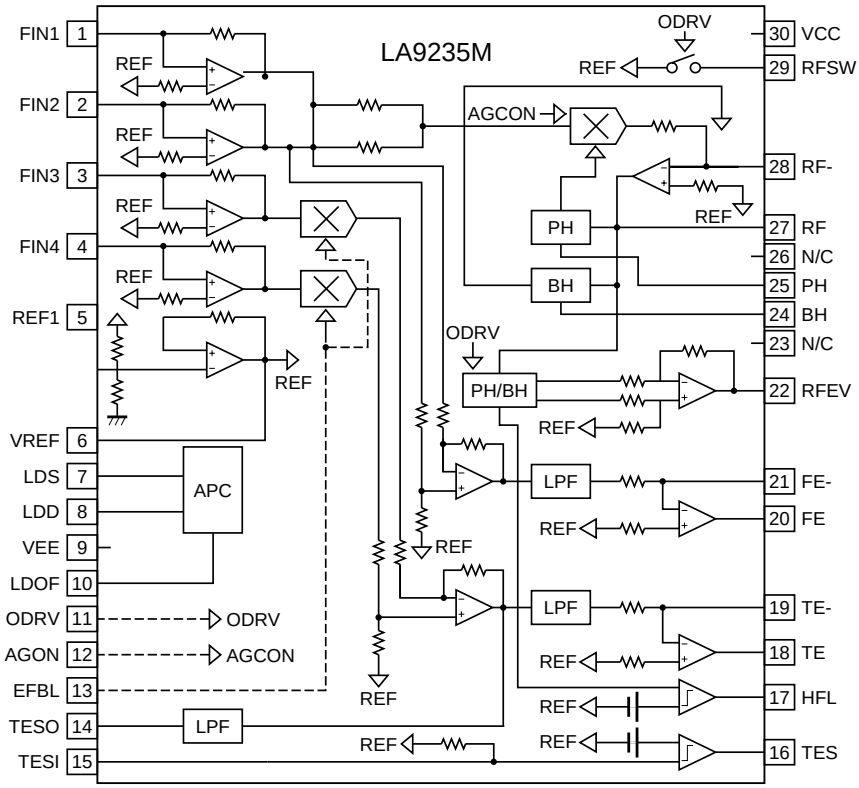


Figure 40-2

FUNCTION TABLE OF IC

IC1 VHiLA9235M/-1: Servo Amp. (LA9235M)



IC2 VHiLC78641E-1: Servo/Signal Control (LC78641E)

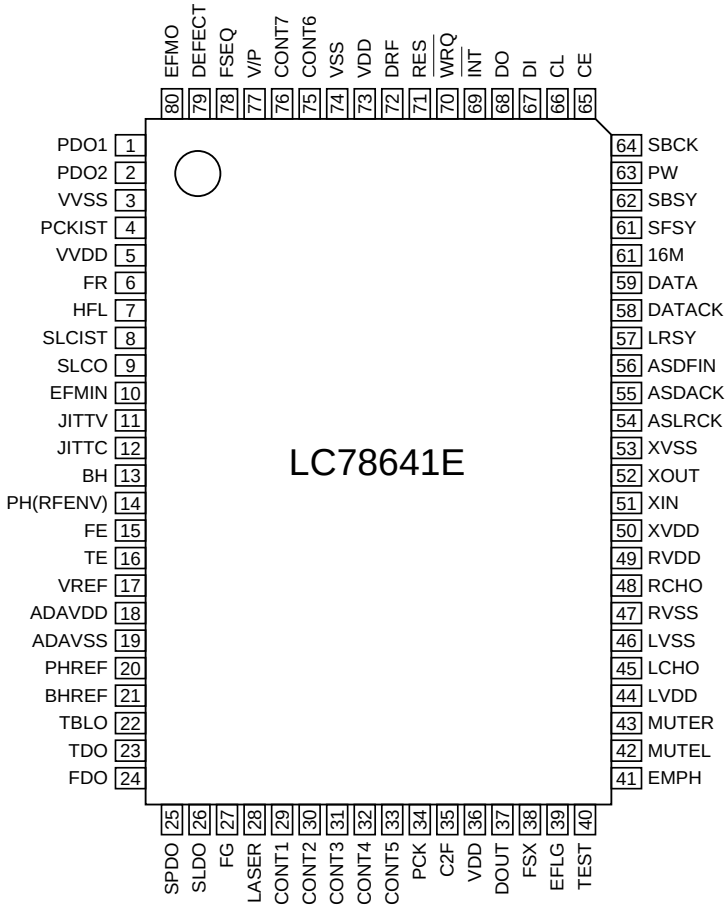


Figure 41 BLOCK DIAGRAM OF IC

IC2 VHiLC78641E-1: Servo/Signal Control (LC78641E) (1/2)

Pin No.	Terminal Name	Input/Output	Setting in Reset	Function		
1	PDO1	Output	–	For PULL	Phase-comparison output terminal for built-in VOC control.	
2	PDO2	Output	–		Phase-comparison output terminal for built-in VOC control. Rough servo : OFF, phase servo : ON.	
3	VVSS	–	–		Ground terminal for built-in VCO.	
4	PCKIST	AI	–		Resistor terminal for setting the PDO output current.	
5	VVDD	–	–		Power terminal for built-in VCO.	
6	FR	AI	–		Resistor terminal for setting the VCO frequency range.	
7	HFL	Input	–	Mirror detection signal input terminal.		
8	SLCIST	AI	–	For slice level control	Resistance connection terminal for current adjustment of SLCO output.	
9	SLCO	Output	–		Control output.	
10	EFMIN	Input	–		EFM signal input terminal.	
11*	JITTV	Output	Unfixed	Jitter detection/monitor terminal.		
12	JITTC	Output	–	Jitter detection/adjustment terminal.		
13	BH	Input	–	BH signal input terminal. A/D input.		
14	PH(RFENV)	Input	–	PH signal or RFENV signal input terminal. A/D input.		
15	FE	Input	–	FE signal input terminal. A/D input.		
16	TE	Input	–	TE signal input terminal. A/D input.		
17	VREF	Input	–	VREF signal input terminal. A/D input.		
18	ADAVDD	–	–	AD for servo, D/A power terminal.		
19	ADAVSS	–	–	AD for servo, D/A ground terminal.		
20*	PHREF	Output	(1/2VDD)	PH reference output terminal. D/A output.		
21*	BHREF	Output	(1/2VDD)	BH reference output terminal. D/A output.		
22	TBLO	Output	(1/2VDD)	Output terminal for tracking balance. D/A output.		
23	TDO	Output	(1/2VDD)	Output terminal for tracking control. D/A output.		
24	FDO	Output	(1/2VDD)	Output terminal for focus control. D/A output.		
25	SPDO	Output	(1/2VDD)	Output terminal for spindle control. D/A output.		
26	SLDO	Output	(1/2VDD)	Output terminal for sled control. D/A output.		
27*	FG	Input	–	FG signal input terminal. (When not used, connect to 0V)		
28	LASER	Output	L	LASER ON/OFF control terminal.		
29	CONT1	In/Output	Input mode	General purpose input/output terminal 1.		Controlled with serial data command from microcomputer. When not used, set it as the input terminal and open it by connecting to 0V, or set it as the output terminal and open it.
30	CONT2	In/Output	Input mode	General purpose input/output terminal 2.		
31	CONT3	In/Output	Input mode	General purpose input/output terminal 3.		
32	CONT4	In/Output	Input mode	General purpose input/output terminal 4.		
33	CONT5	In/Output	Input mode	General purpose input/output terminal 5.		
34*	PCK	Output	H	Clock monitor terminal for EFM data replay. 4.3218 MHz as phase clock.		
35*	C2F	Output	H	C2 flag output terminal.		
36	VDD	–	–	Power terminal of digital system.		
37*	DOUT	Output	L	Output terminal of digital OUT. (EIAJ format)		
38*	FSX	Output	L	Output terminal of synchronous signal of 7.35 kHz divided from quartz oscillation.		
39*	EFLG	Output	L	C1, C2 correct monitor terminal.		
40	TEST	Input	–	Input terminal for test. Surely connected to 0V.		
41*	EMPH	In/Output	Input mode	Emphasis terminal. After resetting, it is configured as an input terminal. It can be controlled from the outside. It is also becomes a emphasis monitor terminal under command control.		
42*	MUTEL	Output	H	Mute output terminal for L channel.		
43*	MUTER	Output	H	Mute output terminal for R channel.		

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC2 VHiLC78641E-1: Servo/Signal Control (LC78641E) (2/2)

Pin No.	Terminal Name	Input/Output	Setting in Reset	Function	
44	LVDD	–	–	L channel D/A converter	Power terminal for L channel.
45	LCHO	Output	1/2VDD		L channel output terminal.
46	LVSS	–	–		Ground terminal for L channel. Surely connected to 0V.
47	RVSS	–	–	R channel D/A converter	Ground terminal for R channel. Surely connected to 0V.
48	RCHO	Output	1/2VDD		R channel output terminal.
49	RVDD	–	–		Power terminal for R channel.
50	XVDD	–	–	For quartz oscillation	Power terminal for quartz oscillation.
51	XIN	Input	Oscillation		Ground terminal of 16.9344 MHz quartz oscillation.
52	XOUT	Output	Oscillation		
53	XVSS	–	–		Ground terminal for quartz oscillation. Surely connected to 0V.
54	ASLRCK	Input	–	For anti shock mode	L/R clock input terminal. (When not used,connect to 0V)
55	ASDACK	Input	–		Bit clock input terminal. (When not used,connect to 0V)
56	ASDFIN	Input	–		L/R channel data input terminal. (When not used,connect to 0V)
57*	LRSY	Output	L	For digital data output	L/R clock output terminal.
58*	DATACK	Output	L		Bit clock output terminal.
59*	DATA	Output	L		L/R channel data output terminal.
60*	16M	Output	Clock output	16.9344MHz output terminal.	
61*	SFSY	Output	L	Output terminal of synchronous signal of subcode frame. It drops when subcode stand by.	
62*	SBSY	Output	L	Output terminal of synchronous signal of subcode block.	
63*	PW	Output	L	Output terminal of subcodes P,A,R,S,T,U and W.	
64	SBCK	Input	–	Clock input terminal to read subcode. (When not used,connect to 0V)	
65	CE	Input	–	For microcomputer interface	Chip enable signal input terminal.
66	CL	Input	–		Data transmission clock input terminal.
67	DI	Input	–		Data input terminal.
68	DO	Output	L		Data output terminal.
69	INT	Output	H		Interruption signal output terminal.
70	WRQ	Output	H		Interruption signal output terminal.
71	RES	Input	–	Reset input terminal of LC78640. When turning on power, set it at "L".	
72	DRF	Output	L	Focus ON detection terminal.	
73	VDD5V	–	–	Power terminal for microcomputer interface.	
74	VSS	–	–	Ground terminal of digital system. Surely connected to 0V.	
75	CONT6	In/Output	Input mode	General purpose input/output terminal 6.	Controlled with serial data command from microcomputer. When not used, set it as the input terminal and open it by connecting to 0V, or set it as the output terminal and open it.
76	CONT7	In/Output	Input mode	General purpose input/output terminal 7.	
77*	V/ *P	Output	H	Monitor output terminal for automatic switch of rough servo/phase control. "H" for rough servo, and "L" for phase servo.	
78*	FSEQ	Output	L	Output terminal synchronous signal detection. "H" is output when synchronous signal detected by EFM signal matches synchronous signal internally generated.	
79	DEFECT	In/Output	Input mode	Defect terminal. After resetting, it is configured as an input terminal. It can be controlled from the outside. It also becomes a defect monitor terminal under command control	
80*	EFMO	Output	Unfixed	EFM signal output terminal.	

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

Be sure to supply the same potential to each power terminal. (VVDD,ADAVDD,VDD,LVDD,RVDD,XVDD)
Terminal witch is controlled by the power terminal (VDD5V) for a microcomputer interface :
CE (65pin), CL (66pin), DI (67pin), DO (68pin), INT (69pin), WRQ (70pin), RES (71pin), DRF (72pin), CONT6 (75pin), CONT7 (76pin)

IC701 RH-iX0337AWZZ: System Microcomputer (IX0337AW) (1/2)

Pin No.	Port Name	Terminal Name	Input/Output	Function
1	VDD	VDD	—	(+) POWER SUPPLY
2	P37	—	—	GND
3*	P36	S-BUSY	Output	COMMUNICATE TO MPEG MICROCOMPUTER
4	P35	T–BIAS	Output	TAPE RECORD BIAS
5	P34	T–T1/T2	Output	TAPE T1/T2 CHANGE
6	P33	REC/PLAY	Output	TAPE REC/PLAY CHANGE
7	P32	RES OUT	Output	CD DSP RESET & MPEG MICROCOMPUTER RESET
8	P31	DRF	Input	CD RF LEVEL DETECTION
9	P30	WRQ	Input	CD DSP WRITE REQUEST
10	RESET	RESET	Input	RESET
11	X2	X2	Output	MAIN CLOCK
12	X1	X1	Input	MAIN CLOCK
13	VPP/IC	VPP/IC	—	GND
14*	XT2	XT2	—	OPEN
15	P04	CD INT	Input	CD DSP INTERRUPT
16	VDD	VDD	—	(+) POWER SUPPLY
17	P27	CD CLK/MCLK	Output	CD DSP CLOCK/MPEG MICROCOMPUTER CLOCK
18	P26	CD ID/MDI	Output	CD DSP COMMAND/MPEG MICROCOMPUTER COMMA
19	P25	CD DO/MDO	Input	CD DSP CODE Q OUT/MPEG MICROCOMPUTER DATA INPUT
20	P24	CD CE	Output	CD DSP CE OUTPUT
21	P23	CE	Output	CE OUTPUT
22	P22	CLK	Output	CLOCK OUTPUT
23	P21	DI	Output	DATA OUTPUT
24	P20	DO	Output	DATA INPUT
25	AVSS	AVSS	—	ANALOG GROUND
26	ANI7 P17	TUN SM M–BUSY	Input Input	TUNER SIGNAL METER INPUT COMMUNICATE TO MPEG MICROCOMPUTER M_BUSY
27	ANI6	NO USE	Input	GND
28	ANI5	SPEANA 2	Input	SPEANA DATA INPUT 16 kHz
29	ANI4	SPEANA 1	Input	SPEANA DATA INPUT 1 kHz
30	ANI3	SPEANA 0	Input	SPEANA DATA INPUT 63 kHz
31-33	ANI2-ANI0	KEY2-KEY0	Input	KEY INPUT
34	AVDD	AVDD	—	ANALOG VDD
35	AVREF	AVREF	—	ANALOG REF VOLTAGE
36	INTP3	SYS STOP	Input	SYSTEM STOP INPUT
37*	P02	SPRLY	Output	SPEAKER OUTPUT RELAY CONTROL
38	INTP1	NO USED	Input	GND
39	INTP0	REMOCON	Input	REMOCON INPUT
40	VSS	VSS	—	GROUND VOLTAGE
41	P74	SMUTE	Output	SYSTEM MUTE CONTROL
42	P73	T_SOL_B	Output	TAPE 2 SOLENOID CONTROL
43	P72	T_SOL_A	Output	TAPE 1 SOLENOID CONTROL
44	P71	T_MOTOR	Output	TAPE MOTOR CONTROL
45	P70	TIMER LED	Output	TIMER LED CONTROL
46	VDD	VDD	—	(+) POWER SUPPLY
47	P127	AC RLY_CONT	Output	AC RELAY CONTROL
48	P126	SPRLY	Output	SPEAKER OUTPUT RELAY CONTROL
49	P125	SP DET	Input	SPEAKER OUTPUT DETECTION
50	P124	T1 RUN	Input	TAPE 1 RUN PULSE INPUT
51	P123	T2 RUN	Input	TAPE 2 RUN PULSE INPUT
52	P122	CD CLAMP SW	Input	CD CHANGER CLAMP SWITCH
53	P121	T1 PLAY SW_A	Input	PLAY SWITCH FOR T1

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC701 RH-iX0337AWZZ: System Microcomputer (IX0337AW) (2/2)

Pin No.	Port Name	Terminal Name	Input/Output	Function
54	P120	T2 PLAY SW_B	Input	PLAY SWITCH FOR T2
55	P119	PPA	Input	TAPE 2 A–SIDE FULL PROOF
56	P118	FPB	Input	TAPE 2 B_SIDE FULL PROOF
57	P117	MIC IN	Input	MIC SWITCH
58*	P116	KARAOKE LATCH	Output	KARAOKE LATCH (When not used. Connect to 0V)
59	P115	DISTOUT/SW OUT	Output	DISTINATION OUTPUT
60	FIP39	SPN	Input	TUNER SPAN CHANGE
61*-62*	FIP38-FIP37	NO USE	Input	OPEN
63*-66*	FIP36-FIP33	P22-P19	Output	FL DISPLAY DRIVER
67-70* (68*,69*)	FIP32-FIP29 P103-P100	P18-P15 DIST3-DIST0	Output Input	FL DISPLAY DRIVER DISTINATION INPUT
71-78	FIP28-FIP21	P14-P7	Output	FL DISPLAY DRIVER
79	VLOAD	VLOAD	—	FL DRIVER (–) POWER SUPPLY.–30V
80-85	FIP20-FIP15	P6-P1	Output	FL DISPLAY SEGMENT
86-89	FIP14-FIP11	—	Input	OPEN
90-100	FIP30-FIP0	G11-G1	Output	FL DISPLAY SEGMENT DRIVER

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC3 VHiM63001FP-1: Focus/Tracking/Spin/Sled Driver (M63001FP)

Pin No.	Terminal Name	Function
1	IN2-	CH2 inverted input.
2	IN1A-	CH1 inverted input.
3	IN1B-	CH1 output offset control.
4	OUT1-	CH1 inverted output.
5	OUT1+	CH1 non-inverted output.
6	OUT2-	CH2 inverted output.
7	OUT2+	CH2 non-inverted output.
8-14	GND	GND
15	OUT3+	CH3 non-inverted output.
16	OUT3-	CH3 inverted output.
17	IN3-	CH3 inverted input.
18	VCC1	Power supply 1 (CH1, CH2, CH3)
19	STANDBY	STANDBY signal input.
20	VRFE	CH1-CH4 Reference voltage input.
21	MUTE	Mute signal input (CH6).
22	IN5-	CH5 inverted input.
23	IN5+	CH5 non-inverted input.
24	VCC2	Power supply 2 (CH4).
25	IN4-	CH4 inverted input.
26	OUT4-	CH4 inverted output.
27	OUT4+	CH4 non-inverted output.
28	VCC3	Power supply 3 (CH5).
29-35	GND	GND
36*	OUT5+	CH5 non-inverted output.
37*	OUT5-	CH5 inverted output.
38	OUT6+	CH6 non-inverted output.
39	OUT6-	CH6 inverted output.
40	VCC4	Power supply 4 (CH6).
41	IN6-	CH6 inverted input.
42	IN6+	CH6 non-inverted input.

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

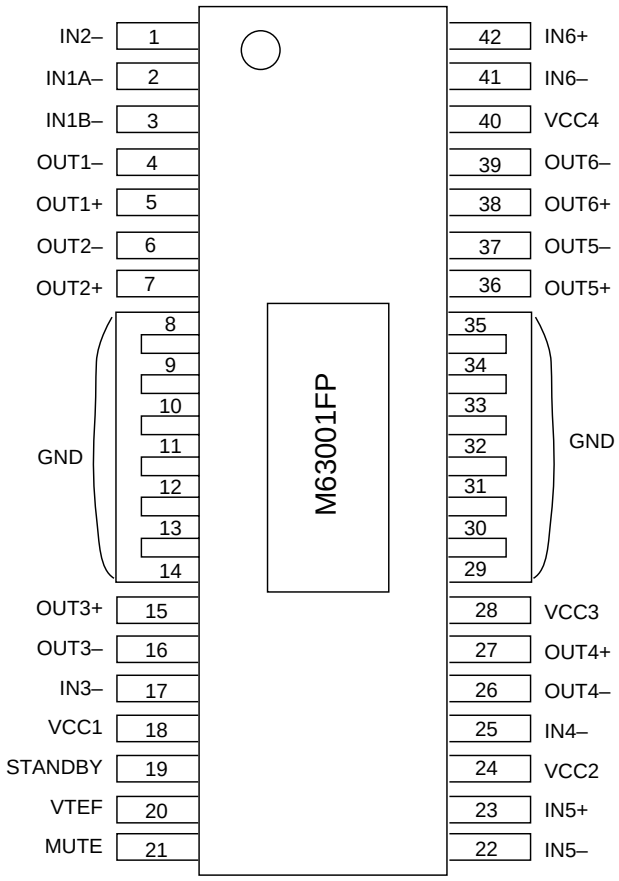
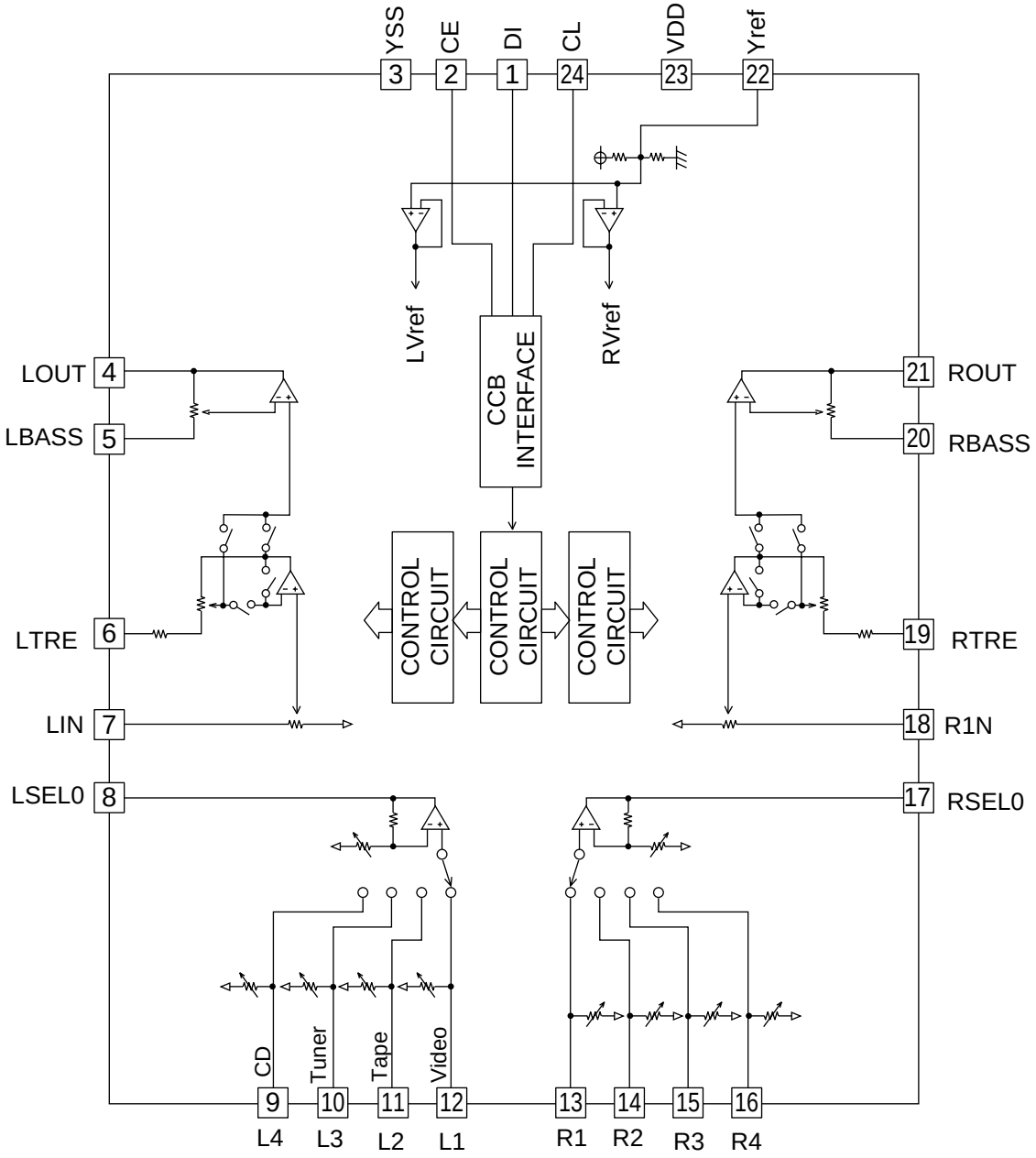


Figure 45 BLOCK DIAGRAM OF IC

IC601 VHiLC75341/-1: Audio Processor (LC75341)



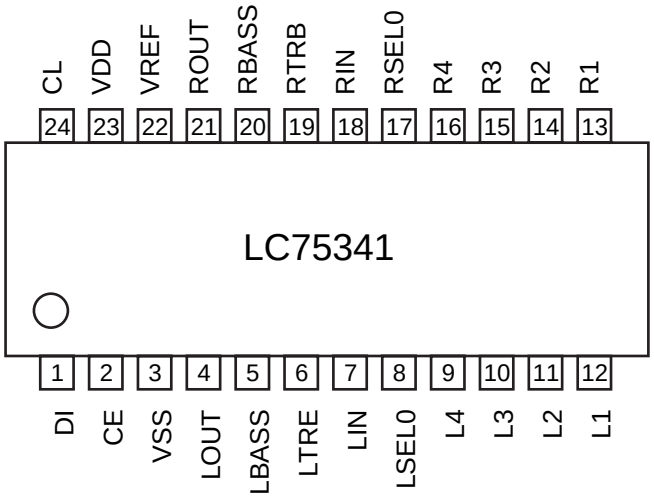
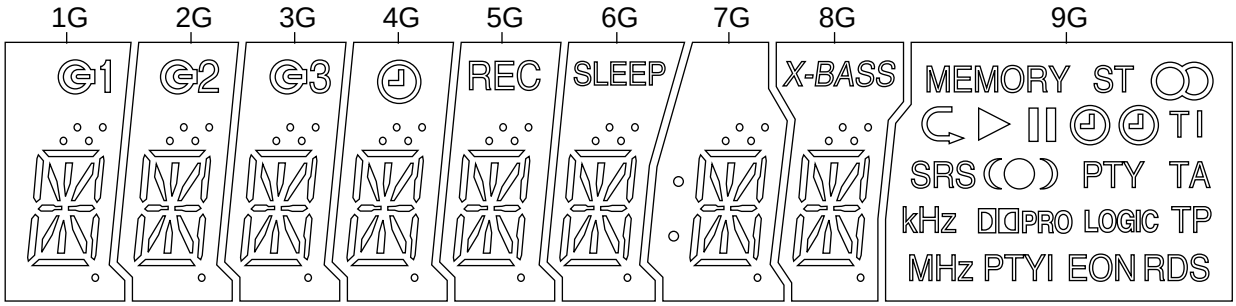
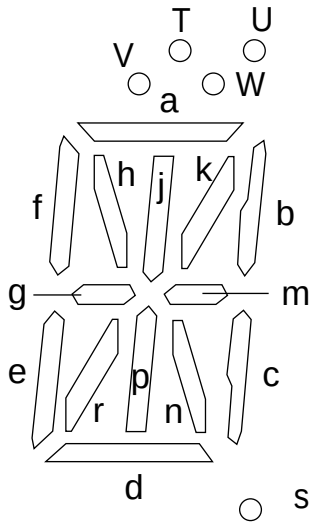


Figure 46 BLOCK DIAGRAM OF IC

FL701 VVKSVA9MS13-1: FL Display





	1G	2G	3G	4G	5G	6G	7G	8G	9G
P1	G1	G2	G3	◴	REC	SLEEP	:	X-BASS	PTYI
P2	U	U	U	U	U	U	U	U	
P3	T	T	T	T	T	T	T	T	TA
P4	V	V	V	V	V	V	V	V	TP
P5	W	W	W	W	W	W	W	W	RDS
P6	a	a	a	a	a	a	a	a	TI
P7	b	b	b	b	b	b	b	b	◯◯
P8	k	k	k	k	k	k	k	k	ST
P9	j	j	j	j	j	j	j	j	MEMORY
P10	h	h	h	h	h	h	h	h	PTY
P11	f	f	f	f	f	f	f	f	⟲
P12	m	m	m	m	m	m	m	m	⏸
P13	d	d	d	d	d	d	d	d	MHz
P14	g	g	g	g	g	g	g	g	▷
P15	p	p	p	p	p	p	p	p	kHz
P16	e	e	e	e	e	e	e	e	EON
P17	n	n	n	n	n	n	n	n	PRO LOGIC
P18	r	r	r	r	r	r	r	r	SRS ◯
P19	c	c	c	c	c	c	c	c	◴ (L)
P20	s	s	s	s	s	s	s	s	◴ (R)

Figure 47 FL DISPLAY

— M E M O —

SHARP PARTS GUIDE

MODEL CD-BA1200H

CD-BA1200H Mini Component System consisting of CD-BA1200H (main unit) and CP-BA1200H (speaker system).

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following information.

1. MODEL NUMBER
2. REF. No.
3. PART NO.
4. DESCRIPTION

★ MARK: SPARE PARTS-DELIVERY SECTION

For U.S.A. only

Contact your nearest SHARP Parts Distributor to order.

For location of SHARP Parts Distributor,
Please call Toll-Free;
1-800-BE-SHARP

Explanation of capacitors/resistors parts codes

Capacitors

VCC ..... Ceramic type
VCK..... Ceramic type
VCT ..... Semiconductor type
VC • • MF ..... Cylindrical type (without lead wire)
VC • • MN..... Cylindrical type (without lead wire)
VC • • TV..... Square type (without lead wire)
VC • • TQ ..... Square type (without lead wire)
VC • • CY ..... Square type (without lead wire)
VC • • CZ ..... Square type (without lead wire)
VC • • • • • • • • • J .. The 13th character represents capacity difference.
("J" ±5%, "K" ±10%, "M" ±20%, "N" ±30%,
"C" ±0.25 pF, "D" ±0.5 pF, "Z" +80-20%.)

If there are no indications for the electrolytic capacitors, error is ±20%.

Resistors

VRD ..... Carbon-film type
VRS..... Carbon-film type
VRN ..... Metal-film type
VR • • MF ..... Cylindrical type (without lead wire)
VR • • MN..... Cylindrical type (without lead wire)
VR • • TV..... Square type (without lead wire)
VR • • TQ ..... Square type (without lead wire)
VR • • CY ..... Square type (without lead wire)
VR • • CZ ..... Square type (without lead wire)
VR • • • • • • • • • J .. The 13th character represents error.
("J" ±5%, "F" ±1%, "D" ±0.5%.)

If there are no indications for other parts, the resistors are ±5% carbon-film type.

NOTE:
Parts marked with "⚠" are important for maintaining the safety of the set.
Be sure to replace parts with specified ones for maintaining the safety and performance of the set.

CD-BA1200H

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION

CD-BA1200H

INTEGRATED CIRCUITS

IC1	VHILA9235M/-1	J	AQ	Servo Amp.,LA9235M
IC2	VHILC78641E-1	J	AV	Servo/Signal Control,LC78641E
IC3	VHIM63001FP-1	J	AX	Focus/Tracking/Spin/Sled Driver, M63001FP
IC101	VHIAN7345K/-1	J	AM	Playback and Record/Playback Amp.,AN7345K
IC302	VHILC72131/-1	J	AP	PLL (Tuner),LC72131
IC303	VHILA1832S/-1	J	AN	FM IF Det./FM Mpx./AM IF, LA1832S
IC601	VHILC75341/-1	J	AM	Audio Processor,LC75341
IC701	RH-IX0337AWZZ	J	AX	System Microcomputer, IX0337AW
IC704	VHIKIA7042AP1	J	AC	Reset,KIA7042AP
IC901	VHILA4282//-1	J	AM	Power AMP.,LA4282
IC902	VHIKIA7810AP1	J	AF	Voltage Regulator,KIA7810AP
IC903	VHIAN78L05/-1	J	AE	Constant Voltage Regulator, AN78L05
IC904	VHIKIA7805P-1	J	AF	Voltage Regulator,KIA7805P
IC905	VSKTC2026//-1	J	AF	Silicon,NPN,KTC2026

TRANSISTORS

Q1	VSKTC3203Y/-1	J	AC	Silicon,NPN,KTC3203 Y
Q2	VSKRC102M//-1	J	AC	Digital,NPN,KRC102 M
Q3	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q101	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q102,103	VSKRC104M//-1	J	AC	Digital,NPN,KRC104 M
Q104~107	VS2SC1845F/-1	J	AC	Silicon,NPN,2SC1845 F
Q108~111	VS2SC3331//-1	J	AB	Silicon,NPN,2SC3331
Q112	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q113	VSKRC104M//-1	J	AC	Digital,NPN,KRC104 M
Q114	VSKTC3203Y/-1	J	AC	Silicon,NPN,KTC3203 Y
Q301	VS2SC380-O/-1	J	AC	Silicon,NPN,2SC380 O
Q360	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q601,602	VS2SC3331//-1	J	AB	Silicon,NPN,2SC3331
Q701	VSKRC107M//-1	J	AC	Digital,NPN,KRC107 M
Q702,703	VS2SC3331//-1	J	AB	Silicon,NPN,2SC3331
Q704,705	VSKTA1271Y/-1	J	AC	Silicon,PNP,KTA1271 Y
Q706	VSKTA1273Y/-1	J	AE	Silicon,PNP,KTA1273 Y
Q707	VSKRC102M//-1	J	AC	Digital,NPN,KRC102 M
Q803	VS2SC3331//-1	J	AB	Silicon,NPN,2SC3331
Q901,902	VSKRC102M//-1	J	AC	Digital,NPN,KRC102 M
Q904	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR

DIODES

D21,22	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D93	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D301~304	VHD1SS133//-1	J	AA	Silicon,1SS133
D701~712	VHD1SS133//-1	J	AA	Silicon,1SS133
D801	VHD1SS133//-1	J	AA	Silicon,1SS133
D802~805	VHD1N4004S/-1	J	AB	Silicon,1N4004S
D806	VHD1SS133//-1	J	AA	Silicon,1SS133
D902	VHD1N4004S/-1	J	AB	Silicon,1N4004S
D903,904	VHD1SS133//-1	J	AA	Silicon,1SS133
D907~910	VHDRL203F//-1	J	AE	Silicon,RL203F
D911~917	VHD1N4004S/-1	J	AB	Silicon,1N4004S
D918	VHD1SS133//-1	J	AA	Silicon,1SS133
LED722	VHP4204SRT7-1	J	AD	LED,Red,4204SRT7
ZD61	VHEDZ3R9BSB-1	J	AC	Zener,3.9V,DZ3.9BSB
ZD351	VHEDZ5R1BSB-1	J	AC	Zener,5.1V,DZ5.1BSB
ZD902	VHEDZ300BSB-1	J	AB	Zener,30V,DZ30BSB
ZD903	VHEMTZJ6R2A-1	J	AA	Zener,6.2V,MTZJ6.2A

FILTERS

CF301,302	RCILF0072AFZZ	J	AC	510 µH,Bias Oscillator
CF351	RFILF0003AWZZ	J	AK	FM IF
CF352	RFILA0009AWZZ	J	AE	AM IF

TRANSFORMERS

⚠	PT801	RTRNP0306AWZZ	J	AZ	Power,Main
⚠	PT802	RTRNP0313AWZZ	J	AN	Power,Sub
	T303	RCILA1064AFZZ	J	AD	AM Tracking
	T306	RCILB0058AFZZ	J		AM OSC
	T351	RCILI0019AWZZ	J	AD	AM IF

COILS

	L61	VP-XHR82K0000	J	AC	0.82 µH
	L62	VP-XH2R2K0000	J	AB	2.2 µH,Choke
	L101,102	VP-DH2R2K0000	J	AB	2.2 mH,Peaking
	L103	VP-DH101K0000	J	AB	100 µH,Choke
	L104	VP-MK331K0000	J	AB	330 µH,Choke
	L341	RBLN-0002AWZZ	J		Balun
	L342	VP-DH2R2K0000	J	AB	2.2 mH,Peaking
	L351,352	VP-DH101K0000	J	AB	100 µH,Choke
	L354	RFILL0001AWZZ	J	AE	Low Pass Filter
	L701	VP-DH101K0000	J	AB	100 µH,Choke
⚠	L801	RCILZ0022AWZZ	J		Line Filter
	L901,902	RCILZ0137AFZZ	J	AA	0.29 µH
	L903	VP-DH2R2K0000	J	AB	2.2 mH,Peaking

VARIABLE CAPACITOR

VD301	VHCSVC348S/-1	J	AK	Variable Capacitance,SVC348S

VIBRATORS

X351	92LCRSTL1425A	J	AF	Crystal,456 kHz
X352	RCRSP0002AWZZ	J	AH	Crystal,4.5 MHz
XL1	92LCRSTL1746AT	J	AH	Crystal,16.9344 MHz
XL701	RCRSP0003AWZZ	J	AH	Crystal,4.1943 MHz

CAPACITORS

C6	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C7	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C8	VCKYTV1HB104K	J	AB	0.1 µF,50V
C11	RC-EZY474AF0J	J		0.47 µF,6.3V,Electrolytic
C12	VCKYTV1HB104K	J	AB	0.1 µF,50V
C13	VCKYTV1HB103K	J	AA	0.01 µF,50V
C14	VCKYTV1EF334Z	J	AB	0.33 µF,25V
C16	VCCSPA1HL6R0J	J	AA	6 pF,50V
C17	VCKYTV1HB472K	J	AA	0.0047 µF,50V
C18	VCCCTV1HH3R0C	J	AA	3 pF (CH),50V
C19	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C20,21	VCKYTV1HB104K	J	AB	0.1 µF,50V
C22	VCKYTV1HB101K	J	AA	100 pF,50V
C23	VCKYTV1HB473K	J	AA	0.047 µF,50V
C24	VCEAZA1HW225M	J	AB	2.2 µF,50V,Electrolytic
C25	VCKYTV1HB104K	J	AB	0.1 µF,50V
C26	VCKYTV1HB473K	J	AA	0.047 µF,50V
C27	VCKYTV1HB104K	J	AB	0.1 µF,50V
C28	VCEAZA1AW476M	J	AB	47 µF,10V,Electrolytic
C29,30	VCKYTV1HB104K	J	AB	0.1 µF,50V
C31	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C34	VCTYBT1EF223Z	J	AA	0.022 µF,25V
C38,39	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C40	VCKYTV1HB152K	J	AA	0.0015 µF,50V
C41	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C42	VCCSTV1HL680J	J	AA	68 pF,50V
C43	VCKYTV1HB152K	J	AA	0.0015 µF,50V
C44	VCKYTV1HB104K	J	AB	0.1 µF,50V
C45	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C46	VCKYTV1EF223Z	J	AA	0.022 µF,25V
C47	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C49,50	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C51	VCEAZA1AW476M	J	AB	47 µF,10V,Electrolytic
C52	VCTYPA1CX103K	J	AA	0.01 µF,16V
C53	VCKYTV1HB102K	J	AA	0.001 µF,50V
C54	VCEAZA1AW476M	J	AB	47 µF,10V,Electrolytic
C55	VCKYTV1HB103K	J	AA	0.01 µF,50V
C56	VCEAZA0JW337M	J	AC	330 µF,6.3V,Electrolytic
C64	RC-EZY474AF0J	J		0.47 µF,6.3V,Electrolytic
C71	VCKYTV1HB101K	J	AA	100 pF,50V
C72	VCKYTV1HB103K	J	AA	0.01 µF,50V
C73~78	VCKYTV1HB101K	J	AA	100 pF,50V
C80	VCKYTV1HB104K	J	AB	0.1 µF,50V
C81~83	VCKYTV1EF223Z	J	AA	0.022 µF,25V
C101	VCKZPA1HF473Z	J	AA	0.047 µF,50V
C102,103	VCKYMN1HB561K	J	AA	560 pF,50V
C104,105	VCKYMN1HB181K	J	AA	180 pF,50V
C106,107	VCKYMN1HB561K	J	AA	560 pF,50V
C108	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C109	VCKYBT1HB102K	J	AA	0.001 µF,50V
C112~115	VCKYMN1HB331K	J	AA	330 pF,50V
C116,117	VCEAZA1EW107M	J	AB	100 µF,25V,Electrolytic
C118,119	VCTYPA1EX333K	J	AA	0.033 µF,25V

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
C120,121	VCKYMN1HB561K	J	AA	560 pF,50V
C122,123	VCEAZA1HW105M	J	AB	1 µF,50V,Electrolytic
C126,127	VCKYMN1HB271K	J	AA	270 pF,50V
C128,129	VCEAZA1EW226M	J	AB	22 µF,25V,Electrolytic
C130,131	VCKZPA1HF223Z	J	AA	0.022 µF,50V
C132,133	VCTYMN1CX332K	J	AA	0.0033 µF,16V
C134,135	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C136	VCEAZA1EW226M	J	AB	22 µF,25V,Electrolytic
C137	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C138	VCEAZA1AW227M	J	AC	220 µF,10V,Electrolytic
C139	VCEAZA1HW335M	J	AB	3.3 µF,50V,Electrolytic
C140	VCQPKA2AA822J	J	AA	0.0082 µF,100V,Polypropylene
C141	VCQYKA1HM393K	J	AB	0.039 µF,50V,Mylar
C142	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C145	VCKYMN1HB471K	J	AA	470 pF,50V
C146	VCKYMN1HB102K	J	AA	0.001 µF,50V
C148	VCKZPA1HF473Z	J	AA	0.047 µF,50V
C301	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C302	VCKYMN1HB102K	J	AA	0.001 µF,50V
C321	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C323	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C330	VCCUMN1HJ150J	J	AA	15 pF (UJ),50V
C331	VCKZPA1HF473Z	J	AA	0.047 µF,50V
C332	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C334	VCCUMN1HJ270J	J	AA	27 pF (UJ),50V
C335	VCKYMN1HB561K	J	AA	560 pF,50V
C341,342	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C344	VCCSMN1HL330J	J	AA	33 pF,50V
C345~347	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C350	VCTYBT1EF223Z	J	AA	0.022 µF,25V
C352	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C353,354	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C355	VCCSMN1HL220J	J	AA	22 pF,50V
C356	VCKYMN1HB102K	J	AA	0.001 µF,50V
C357	VCEAZA1HW225M	J	AB	2.2 µF,50V,Electrolytic
C358	VCEAZA1HW105M	J	AB	1 µF,50V,Electrolytic
C361	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C362	VCEAZA1HW335M	J	AB	3.3 µF,50V,Electrolytic
C363	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C364	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C365	VCKZPA1HF223Z	J	AA	0.022 µF,50V
C366	VCKYMN1HB102K	J	AA	0.001 µF,50V
C367,368	VCEAZA1HW105M	J	AB	1 µF,50V,Electrolytic
C369	VCCUMN1HJ270J	J	AA	27 pF (UJ),50V
C370~372	VCEAZA1HW105M	J	AB	1 µF,50V,Electrolytic
C373,374	VCTYPA1CX183K	J	AA	0.018 µF,16V
C380	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C381	VCCCMN1HH120J	J	AA	12 pF (CH),50V
C382	VCCCMN1HH150J	J	AA	15 pF (CH),50V
C385	VCTYMN1CY103N	J	AA	0.01 µF,16V
C386	VCKYMN1HB331K	J	AA	330 pF,50V
C387	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C388	VCKYPA1HB102K	J	AA	0.001 µF,50V
C391	VCEAZA1CW476M	J	AB	47 µF,16V,Electrolytic
C392	VCKYMN1HB102K	J	AA	0.001 µF,50V
C393	VCEAZA1HW105M	J	AB	1 µF,50V,Electrolytic
C394	VCEAZA1CW476M	J	AB	47 µF,16V,Electrolytic
C395	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C396	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C397	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C398	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C399	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C601,602	VCKYMN1HB102K	J	AA	0.001 µF,50V
C603	VCEAZA1EW226M	J	AB	22 µF,25V,Electrolytic
C604	VCEAZA1EW107M	J	AB	100 µF,25V,Electrolytic
C605	VCKZPA1HF223Z	J	AA	0.022 µF,50V
C606	VCEAZA1HW226M	J	AB	22 µF,50V,Electrolytic
C607,608	VCEAZA1HW106M	J	AB	10 µF,50V,Electrolytic
C609~612	VCQYKA1HM104K	J	AB	0.1 µF,50V,Mylar
C613,614	VCTYPA1CX272K	J	AA	0.0027 µF,16V
C617,618	VCEAZA1HW105M	J	AB	1 µF,50V,Electrolytic
C623~630	VCEAZA1HW105M	J	AB	1 µF,50V,Electrolytic
C633	VCKYBT1HB102K	J	AA	0.001 µF,50V
C701	VCTYBT1EF223Z	J	AA	0.022 µF,25V
C702	RC-EZD227AF1A	J	AC	220 µF,10V,Electrolytic
C703	VCCSMN1HL150J	J	AA	15 pF,50V
C704	VCCSMN1HL180J	J	AA	18 pF,50V
C705	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C707,708	RC-EZD105AF1H	J	AB	1 µF,50V,Electrolytic
C710	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C711,712	RC-EZD106AF1C	J	AB	10 µF,16V,Electrolytic
C713	RC-EZD104AF1H	J	AB	0.1 µF,50V,Electrolytic
C714	VCTYMN1CY103N	J	AA	0.01 µF,16V
C715	VCEAZA1HW335M	J	AB	3.3 µF,50V,Electrolytic
C716	VCTYBT1EF223Z	J	AA	0.022 µF,25V
C717	RC-EZD106AF1H	J	AB	10 µF,50V,Electrolytic
C718	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C719	RC-EZD476AF1C	J	AC	47 µF,16V,Electrolytic
⚠ C801	RC-KZ001LAWZZ	J	AB	0.0047 µF,250VAC,Ceramic
C802	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C803	VCEAZA1VW477M	J		470 µF,35V,Electrolytic
C804	VCEAZA0JW108M	J	AC	1000 µF,6.3V,Electrolytic
C805	VCKYPA1HB102K	J	AA	0.001 µF,50V
C807	VCKYPA1HB102K	J	AA	0.001 µF,50V
C903,904	VCKYPA1HB471K	J	AA	470 pF,50V
C905	VCKZPA1HF223Z	J	AA	0.022 µF,50V
C906	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C907	VCEAZA1EW107M	J	AB	100 µF,25V,Electrolytic
C908,909	VCQYKA1HM823K	J	AC	0.082 µF,50V,Mylar
C910	VCEAZA1EW107M	J	AB	100 µF,25V,Electrolytic
C911	VCKZPA1HF223Z	J	AA	0.022 µF,50V
C912,913	VCQYKA1HM104K	J	AB	0.1 µF,50V,Mylar
C914,915	VCEAZA1EW477M	J	AD	470 µF,25V,Electrolytic
C916,917	VCQYKA1HM104K	J	AB	0.1 µF,50V,Mylar
C918	VCKYPA1HB221K	J	AA	220 pF,50V
C919	VCEAZA1HW106M	J	AB	10 µF,50V,Electrolytic
C921,922	VCCSPA1HL221J	J	AA	220 pF,50V
C923~930	VCKZPA1HF223Z	J	AA	0.022 µF,50V
C931,932	VCKYPA1HB102K	J	AA	0.001 µF,50V
C933	VCCSPA1HL680J	J	AA	68 pF,50V
C934	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C935	VCEAZA1EW226M	J	AB	22 µF,25V,Electrolytic
C936,937	VCCSPA1HL101J	J	AA	100 pF,50V
C938	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C939,940	VCQYKA1HM104K	J	AB	0.1 µF,50V,Mylar
C941	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C942,943	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C944	VCKZPA1HF223Z	J	AA	0.022 µF,50V
C945	VCQYKA1HM104K	J	AB	0.1 µF,50V,Mylar
C946	VCEAZW1VW228M	J	AH	2200 µF,35V,Electrolytic
C947	VCEAZW1EW338M	J	AG	3300 µF,25V,Electrolytic
C950~953	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C954	VCEAZA1HW107M	J	AC	100 µF,50V,Electrolytic
C955~957	VCEAZA1HW476M	J	AB	47 µF,50V,Electrolytic
C958,959	VCEAZA1HW107M	J	AC	100 µF,50V,Electrolytic

RESISTORS

	VRD-MN2BD000C	J	AA	0 ohm,Jumper,ø1.4×3.5mm,Ivory
R3	VRS-TV2AB104J	J	AA	100 kohm,1/10W
R4	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R5	VRS-TV2AB393J	J	AA	39 kohms,1/10W
R6	VRS-TV2AB273J	J	AA	27 kohms,1/10W
R7	VRS-TV2AB682J	J	AA	6.8 kohms,1/10W
R8	VRS-TV2AB331J	J	AA	330 ohms,1/10W
R10	VRS-TV2AB273J	J	AA	27 kohms,1/10W
R11	VRS-TV2AB123J	J	AA	12 kohms,1/10W
R12,13	VRS-TV2AB681J	J	AA	680 ohms,1/10W
R14	VRS-TV2AB122J	J	AA	1.2 kohms,1/10W
R15	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R16	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R17	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R19	VRD-ST2CD470J	J	AA	47 ohms,1/6W
R20	VRS-TV2AB221J	J	AA	220 ohms,1/10W
R21,22	VRS-TV2AB471J	J	AA	470 ohms,1/10W
R25	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R35	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R38	VRD-ST2CD271J	J	AA	270 ohms,1/6W
R39	VRD-ST2CD471J	J	AA	470 ohms,1/6W
R40	VRS-TV2AB122J	J	AA	1.2 kohms,1/10W
R42	VRS-TV2AB124J	J	AA	120 kohms,1/10W
R43	VRS-TV2AB224J	J	AA	220 kohms,1/10W
R44	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R45	VRS-TV2AB122J	J	AA	1.2 kohms,1/10W
R46	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R47	VRD-ST2EE3R3J	J	AA	3.3 ohms,1/4W
R48	VRS-TV2AB682J	J	AA	6.8 kohms,1/10W
R50	VRS-TV2AB470J	J	AA	47 ohms,1/10W
R51~54	VRS-TV2AB683J	J	AA	68 kohms,1/10W
R55,56	VRD-ST2CD683J	J	AA	68 kohms,1/6W
R58	VRD-ST2CD221J	J	AA	220 ohms,1/6W
R71~78	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R79	VRS-TV2AB155J	J	AA	1.5 Mohms,1/10W
R80	VRD-ST2CD105J	J	AA	1 Mohm,1/6W

CD-BA1200H

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
R81,82	VRS-TV2AB222J	J	AA	2.2 kohms,1/10W
R83,84	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R88	VRS-TV2AB682J	J	AA	6.8 kohms,1/10W
R94,95	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R101,102	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R103	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R104,105	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R106,107	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R108,109	VRD-MN2BD332J	J	AA	3.3 kohms,1/8W
R110	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R111,112	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R113	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R114,115	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R116,117	VRD-ST2CD560J	J	AA	56 ohms,1/6W
R118,119	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R120,121	VRD-MN2BD392J	J	AA	3.9 kohms,1/8W
R122,123	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R124,125	VRD-MN2BD333J	J	AA	33 kohms,1/8W
R126	VRD-MN2BD683J	J	AA	68 kohms,1/8W
R127,128	VRD-MN2BD682J	J	AA	6.8 kohms,1/8W
R129,130	VRD-MN2BD392J	J	AA	3.9 kohms,1/8W
R131,132	VRD-MN2BD152J	J	AA	1.5 kohms,1/8W
R133,134	VRD-MN2BD101J	J	AA	100 ohm,1/8W
R135,136	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R137	VRD-MN2BD153J	J	AA	15 kohms,1/8W
R138	VRD-ST2CD153J	J	AA	15 kohms,1/6W
R139	VRD-ST2EE181J	J	AA	180 ohms,1/4W
R140	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R141	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R142,143	VRD-ST2CD224J	J	AA	220 kohms,1/6W
R144	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R145	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R146	VRD-RT2HD820J	J	AA	82 ohms,1/2W
R147	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R148	VRD-MN2BD223J	J	AA	22 kohms,1/8W
R149	VRD-ST2CD4R7J	J	AA	4.7 ohms,1/6W
R157	VRD-ST2EE101J	J	AA	100 ohm,1/4W
R323	VRD-MN2BD683J	J	AA	68 kohms,1/8W
R336	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R344	VRD-MN2BD471J	J	AA	470 ohms,1/8W
R345	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R346	VRD-MN2BD331J	J	AA	330 ohms,1/8W
R347	VRD-MN2BD682J	J	AA	6.8 kohms,1/8W
R348	VRD-MN2BD681J	J	AA	680 ohms,1/8W
R349	VRD-MN2BD330J	J	AA	33 ohms,1/8W
R350	VRD-MN2BD272J	J	AA	2.7 kohms,1/8W
R351	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R352	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R353	VRD-MN2BD271J	J	AA	270 ohms,1/8W
R355	VRD-MN2BD332J	J	AA	3.3 kohms,1/8W
R356	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R357	VRD-ST2CD474J	J	AA	470 kohms,1/6W
R358	VRD-ST2CD392J	J	AA	3.9 kohms,1/6W
R359	VRD-MN2BD182J	J	AA	1.8 kohms,1/8W
R360	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R361,362	VRD-MN2BD122J	J	AA	1.2 kohms,1/8W
R363,364	VRD-MN2BD153J	J	AA	15 kohms,1/8W
R365	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R369	VRD-MN2BD150J	J	AA	15 ohms,1/8W
R370	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R372~374	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R376	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R377	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R378	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R379	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R380	VRD-MN2BD152J	J	AA	1.5 kohms,1/8W
R381	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R382	VRD-ST2EE151J	J	AA	150 ohms,1/4W
R383	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R384	VRD-ST2CD562J	J	AA	5.6 kohms,1/6W
R385	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R386	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R387	VRD-ST2CD562J	J	AA	5.6 kohms,1/6W
R388	VRD-MN2BD392J	J	AA	3.9 kohms,1/8W
R391,392	VRD-ST2EE271J	J	AA	270 ohms,1/4W
R393	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R395	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R601,602	VRD-ST2CD331J	J	AA	330 ohms,1/6W
R603,604	VRD-ST2CD182J	J	AA	1.8 kohms,1/6W
R607,608	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R609,610	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R615,616	VRD-ST2CD392J	J	AA	3.9 kohms,1/6W

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
R617	VRD-ST2CD332J	J	AA	3.3 kohms,1/6W
R618	VRD-MN2BD332J	J	AA	3.3 kohms,1/8W
R625	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R702~704	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R705~707	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R708	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R709~718	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R719~721	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R722	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R724,725	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R726~729	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
R730	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R732	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R733~737	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R741,742	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R743	VRD-ST2CD330J	J	AA	33 ohms,1/6W
R744	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R745	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R748~751	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R753	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R755	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R756,757	VRD-MN2BD683J	J	AA	68 kohms,1/8W
R758,759	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R760,761	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R762,763	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R765	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R766~768	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R769	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R770	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R771	VRD-ST2CD104J	J	AA	100 kohm,1/6W
R772	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R773	VRD-ST2CD101J	J	AA	100 ohm,1/6W
R775~777	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R778	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R779	VRD-RT2HD3R3J	J	AA	3.3 ohms,1/2W
R792	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R804	VRD-ST2CD221J	J	AA	220 ohms,1/6W
R805	VRD-ST2CD473J	J	AA	47 kohms,1/6W
R806	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R905	VRD-ST2CD121J	J	AA	120 ohms,1/6W
R906,907	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R908	VRD-ST2CD121J	J	AA	120 ohms,1/6W
R909	VRD-ST2CD563J	J	AA	56 kohms,1/6W
R910,911	VRD-RT2HD271J	J	AA	270 ohms,1/2W
R912,913	VRD-ST2EE4R7J	J	AA	4.7 ohms,1/4W
R914	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R915	VRD-ST2EE821J	J	AA	820 ohms,1/4W
R916,917	VRD-ST2EE331J	J	AA	330 ohms,1/4W
R918~921	VRD-ST2EE6R8J	J	AA	6.8 ohms,1/4W
R922	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R923	VRD-ST2CD330J	J	AA	33 ohms,1/6W
R925	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R926	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R927	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
R928	VRD-ST2CD123J	J	AA	12 kohms,1/6W
R929,930	VRD-ST2CD221J	J	AA	220 ohms,1/6W
R939,940	VRD-ST2EE560J	J	AA	56 ohms,1/4W
RD01	VRD-ST2CD681J	J	AA	680 ohms,1/6W
RD02	VRD-MN2BD821J	J	AA	820 ohms,1/8W
RD03	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD04	VRD-MN2BD152J	J	AA	1.5 kohms,1/8W
RD05	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
RD06	VRD-MN2BD272J	J	AA	2.7 kohms,1/8W
RD07	VRD-MN2BD392J	J	AA	3.9 kohms,1/8W
RD08	VRD-ST2CD563J	J	AA	56 kohms,1/6W
RD09	VRD-MN2BD104J	J	AA	100 kohm,1/8W
RD10	VRD-MN2BD821J	J	AA	820 ohms,1/8W
RD11	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD12	VRD-MN2BD152J	J	AA	1.5 kohms,1/8W
RD13	VRD-MN2BD681J	J	AA	680 ohms,1/8W
RD14	VRD-ST2CD821J	J	AA	820 ohms,1/6W
RD15	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD16	VRD-MN2BD152J	J	AA	1.5 kohms,1/8W
RD17	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
RD18	VRD-ST2CD272J	J	AA	2.7 kohms,1/6W
RD19	VRD-MN2BD392J	J	AA	3.9 kohms,1/8W
RD20	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
RD21	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RD22	VRD-ST2CD153J	J	AA	15 kohms,1/6W
RD23	VRD-MN2BD333J	J	AA	33 kohms,1/8W
RD24	VRD-MN2BD104J	J	AA	100 kohm,1/8W
RD25	VRD-MN2BD681J	J	AA	680 ohms,1/8W
RD26	VRD-MN2BD682J	J	AA	6.8 kohms,1/8W

OTHER CIRCUITRY PARTS

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
BI4/CNS4	QCNWN1572AWZZ	J	AF	Connector Ass'y,6/6Pin
BI601/CNS601	QCNWN1540AWZZ	J	AF	Connector Ass'y,5/5Pin
BI702/CNS702	QCNWN1541AWZZ	J	AH	Connector Ass'y,10/10Pin
CNP1	QCNCM704GAWZZ	J	AC	Plug,7Pin
CNP2	QCNCM704HAFZZ	J	AC	Plug,8Pin
CNP3	92LCONE6P53253	J	AC	Plug,6Pin
CNP3A	92LCONE6P53254	J	AC	Plug,6Pin
CNP4	QCNCM705FAFZZ	J	AB	Plug,6Pin
CNP11	92LCONE5P53254	J	AB	Plug,5Pin
CNP12	92LCONEAP53254	J	AD	Plug,10Pin
CNP101	QCNCM705CAFZZ	J	AA	Plug,3Pin
CNP102	QCNCM705GAFZZ	J	AB	Plug,7Pin
CNP302	92LCONE2P5268	J	AB	Plug,2Pin
CNP701	QCNCWZX21AWZZ	J		Plug,21Pin
⚠ CNP801	QCNCM049BAWZZ	J	AC	Plug,2Pin
CNP901	QCNCM035FAWZZ	J	AC	Plug,6Pin
CNS1A/B	QCNWN1537AWZZ	J	AG	Connector Ass'y,7/7Pin
CNS2A/B	QCNWN1538AWZZ	J	AG	Connector Ass'y,8/8Pin
CNS3A/B	QCNWN1539AWZZ	J	AE	Connector Ass'y,6/6Pin
CNS701	QCNCWZF21AWZZ	J	AF	Plug,21Pin
CNS703	QCNCWZY13AWZZ	J	AC	Plug,13Pin
⚠ F901	92LFUSET252E	J	AD	Fuse,T2.5A L 250V
⚠ F902	92LFUSET162E	J	AC	Fuse,T1.6A L 250V
FE301	RTUNS0012AWZZ	J	AV	FM Front End
FFC13	QCNWN1544AWZZ	J	AE	Flat Cable,13Pin
FFC21	QCNWN1629AWZZ	J	AH	Flat Cable,21Pin
FL701	VVKSVA9MS13-1	J	AZ	FL Display
FW901	QCNWN1612AWZZ	J	AD	Flat Wire,5Pin
JK901	QJAKM0010AWZZ	J	AF	Jack,Headphones
LG901	QLUGP0001AWZZ	J	AC	Lug
LUG1	QLUGP0002AWZZ	J	AB	Lug
M1	92LMTR2790CASY	J	BB	Motor with Chassis [Spindle]
M2	92LMTR1854BASY	J	AP	Motor with Gear [Sled]
M3	92LTWMEN7E6Y	J	AR	Motor with Worm Pulley [T/T Up/Down Loading]
RL801	RRLYD0011AWZZ	J	AE	Relay
RX701	VHLN63H380A-1	J	AK	Remote Sensor,N63H380A
SO301	QTANC0101AWZZ	J	AF	Terminal,FM Antenna
SO901	QTANA0416AWZZ	J	AE	Terminal,Speaker
⚠ SO902	QSOCJ0204AWZZ	J	AE	Socket,AC Input
SW1	SWMPU10780MLB	J		Switch,Push Type [Open/Close]
SW2	SWMPU11470MLB	J		Switch,Push Type [Clamp]
SW3	SWMPU11470MLB	J		Switch,Push Type [Disc Number]
SW4	QSW-F9001AW01	J	AD	Switch,Leaf Type [Pickup In]
SW701	92LSWICHT1663T	J	AC	Switch,Key Type [ON/STAND-BY]
SW702	92LSWICHT1663T	J	AC	Switch,Key Type [CLOCK]
SW703	92LSWICHT1663T	J	AC	Switch,Key Type [TIMER/SLEEP]
SW709	92LSWICHT1663T	J	AC	Switch,Key Type [DISC SKIP]
SW710	92LSWICHT1663T	J	AC	Switch,Key Type [OPEN/CLOSE]
SW711	92LSWICHT1663T	J	AC	Switch,Key Type [EQUALIZER/X-BASS/DEMO]
SW712	92LSWICHT1663T	J	AC	Switch,Key Type [Volume Up]
SW713	92LSWICHT1663T	J	AC	Switch,Key Type [Volume Down]
SW714	92LSWICHT1663T	J	AC	Switch,Key Type [CD]
SW715	92LSWICHT1663T	J	AC	Switch,Key Type [Tape]
SW716	92LSWICHT1663T	J	AC	Switch,Key Type [Tuning/Time Down]
SW717	92LSWICHT1663T	J	AC	Switch,Key Type [Memory/Set]
SW718	92LSWICHT1663T	J	AC	Switch,Key Type [Rewind]
SW719	92LSWICHT1663T	J	AC	Switch,Key Type [Fast Forward]
SW720	92LSWICHT1663T	J	AC	Switch,Key Type [Play/Repeat]
SW721	92LSWICHT1663T	J	AC	Switch,Key Type [Stop]
SW723	92LSWICHT1663T	J	AC	Switch,Key Type [REC/PAUSE]
SW724	92LSWICHT1663T	J	AC	Switch,Key Type [TUNING/TIME UP]
SW725	92LSWICHT1663T	J	AC	Switch,Key Type [Tuner (Band)]

CD MECHANISM PARTS

301	NGERH0011AWZZ	J	AC	Gear,Middle
302	NGERH0012AWZZ	J	AC	Gear,Drive
303	MLEVP0080AWZZ	J	AC	Rail,Guide
304	NSFTM0020AWFW	J	AD	Shaft,Guide
305	92LMCUSN1524A	J	AD	Cushion
⚠ 306	92LHPC1LXASY	J	BD	Pickup Unit Ass'y
306- 1	————		—	Pickup Unit (Not Replacement Item)
306- 2	NGERR0043AFZZ	J	AC	Gear,Rack
306- 3	MSPRC0961AFZZ	J	AA	Spring,Rack
701	XBSSD26P06000	J	AA	Screw,ø2.6×6mm
702	XHBSD20P05000	J	AA	Screw,ø2×5mm
703	XBBSD20P03000	J	AA	Screw,ø2×3mm
704	LX-WZ1070AFZZ	J	AA	Washer,ø1.5×ø3.8×0.25mm
M1	92LMTR2790CASY	J	BB	Motor with Chassis [Spindle]
M2	92LMTR1854BASY	J	AP	Motor with Gear [Sled]
SW4	QSW-F9001AW01	J	AD	Switch,Leaf Type [Pickup In]

CABINET PARTS

201	92LCAB3327AASY	J		Front Panel Ass'y
201- 1	————		—	Front Panel (Not Replacement Item)
201- 2	GDORF0076AWSA	J	AE	Holder,Cassette,Tape 1
201- 3	GDORF0077AWSA	J	AE	Holder,Cassette,Tape 2
201- 4	GCOVA1270AWSA	J	AH	Cover,Cassette,Tape 1
201- 5	GCOVA1271AWSA	J	AH	Cover,Cassette,Tape 2
201- 6	HDECQ0541AWSA	J	AE	Panel,Cassette,Tape 1
201- 7	HDECQ0542AWSA	J	AE	Panel,Cassette,Tape 2
201- 8	HDECQ0577AWSA	J	AG	Panel,Amp.
201-10	JKNBZ0677AWSA	J	AG	Knob,Volume
201-11	JKNBZ0678AWSA	J	AD	Knob,Function Base
201-12	JKNBZ0721AWSA	J	AG	Knob,On/Stand-by/Clock/Timer/ Sleep
201-13	JKNBZ0712AWSA	J	AH	Knob,Play/Stop
201-14	JKNBZ0713AWSA	J	AH	Knob,FF/REW
201-15	JKNBZ0676AWSA	J	AF	Knob,Tuning
201-16	HDECQ0544AWSA	J	AH	Panel,Decoration
201-17	GCOVA1272AWSA	J	AE	Cover,Function Knob,A
201-18	MLIFP0008AWZZ	J	AD	Damper
201-19	MSPRD0092AWFJ	J	AB	Spring,Cassette,Tape 1
201-20	MSPRD0093AWFJ	J	AB	Spring,Cassette,Tape 2
201-21	92LBADGE1671A	J	AC	Badge,SHARP
201-22	JKNBZ0675AWSA	J	AF	Knob,Equalizer/X-BASS/Demo
201-23	GCOVA1273AWSA	J	AE	Cover,Function Knob,B
201-24	GCOVA1274AWSA	J	AE	Cover,Function Knob,C
202	92LCAB3325BASY	J		Side Panel Ass'y,Left
202- 1	————		—	Side Panel,Left (Not Replacement Item)
202- 2	PCUSG0022AWZZ	J	AB	Cushion,Leg
203	92LCAB3325CASY	J		Side Panel Ass'y,Right
203- 1	————		—	Side Panel,Right (Not Replacement Item)
203- 2	PCUSG0022AWZZ	J	AB	Cushion,Leg
204	92LCOV3303AASY	J		CD Tray Cover Ass'y
204- 1	————		—	Cover,CD Tray (Not Replacement Item)
204- 2	GCOVA1254AWSA	J	AE	Cover,CD Tray Panel,Left
204- 3	GCOVA1255AWSA	J	AE	Cover,CD Tray Panel,Right
205	GCAB-1184AWSA	J	AP	Top Cabinet
206	GITAR0584AWSA	J	AK	Rear Panel [Except for U.K.]
206	GITAR0585AWSA	J		Rear Panel [For U.K.]
208	LANGK0110AWFW1	J	AD	Support,Cassette Lock,Tape 1
209	LANGK0111AWFW1	J	AD	Support,Cassette Lock,Tape 2
213	LCHSM0104AWFW	J		Main Chassis
214	LHLDZ1087AWSA1	J	AC	Holder,FL Display
219	MLOKC0003AWZZ	J	AD	Lock Lever,Cassette,Tape 1
220	MLOKC0004AWZZ	J	AD	Lock Lever,Cassette,Tape 2
221	MSPRD0109AWFJ	J	AB	Spring,Cassette Lock,Tape 1
222	MSPRD0110AWFJ	J	AB	Spring,Cassette Lock,Tape 2
224	92LPT0331105	J	AM	Table Loading
225	PCUSG0022AWZZ	J	AB	Cushion,Leg
226	PRDAR0153AWFW	J	AH	Heat Sink,Main
230	QCNWN1615AWZZ	J	AC	Lug Wire
⚠ 231	QFSHD0001AWZZ	J	AB	Holder,Fuse
232	92LBE241414	J	AD	Belt
234	92LEVA0330702	J	AD	Velvet Carpet,Chassis
235	92LMAG0104302	J	AE	Magnet
236	92LMT0304302	J	AB	Plate,Metal
237	92LNBAND1318A	J	AA	Nylon Band,80mm
238	92LNM0305401	J	AB	Velvet Carpet
239	92LPT0303002	J	AB	Roller
240	92LPT0304303	J	AB	Lever,Stop
241	92LPT0304304	J	AB	Stopper
242	92LPT0304305	J	AE	Lever,Lock
243	92LPT0304306	J	AG	Stabilizer
244	92LPT0304307	J	AC	Support,Cam
245	92LPT0304308	J	AB	Lock Gear Pin
246	92LPT0304309	J	AB	Cap,Pulley Stopper
247	92LPT0305413	J	AG	Cam Gear Lower
248	92LPT0309506	J	AD	Gear,Turntable Drive
249	92LPT0309507	J	AD	Gear,Open/Close Drive
250	92LPT0309508	J	AD	Gear,Planet

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NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
251	92LPT0309509	J	AD	Gear,Drive
252	92LPT0309510	J	AE	Gear,Pulley
253	92LPT0309511	J	AD	Gear,Middle
254	92LPT0311101	J	AB	Lever,Clamp
255	92LPT0311102	J	AC	Lever,Disc
256	92LPT0312005	J	AL	Gear,Cam
257	92LPT0320201	J	AE	Support,Stabilizer
258	92LPT0330301	J	AU	Chassis,Loading
259	92LPT0330803	J	AK	CD,Chassis
260	92LPT0331003	J	AT	Chassis,Slide
262	92LSP0304303	J	AB	Spring,Stopper
263	92LSP0304305	J	AB	Spring,Lock
264	92LSP0304306	J	AB	Spring,Lock Gear
268	KMECB0012AWZZ	J	BG	Tape Mechanism Ass'y
270	LHLDZ1230AWZZ	J	AC	Holder,LED
271	92LRDAT1468B	J	AE	Heat Sink,Sub
272	92LCAUT1706A1	J	AC	Label,Class 3 Laser
273	92LCAUT1706B	J	AA	Label,Laser
601	LX-JZ0003AWFF	J	AA	Screw,ø3×12mm
604	XEBSF30P12000	J	AA	Screw,ø3×12mm
605	XESSD30P10000	J	AA	Screw,ø3×10mm
606	XHBSD26P04000	J	AA	Screw,ø2.6×4mm
610	XJBSF30P10000	J	AA	Screw,ø3×10mm
611	XJBSD30P08000	J	AA	Screw,ø3×8mm
612	LX-HZ0009AWFD	J	AC	Screw,Special
613	LX-HZ0082AFZZ	J	AA	Screw,ø4×8mm
614	LX-JZ0010AFFD	J	AA	Screw,Special
616	LX-BZ2222AXZZ	J		Screw,Special
618	92LSC0308MBZI	J	AB	Screw,ø3×8mm
619	92LSC0308RBZI	J		Screw,ø3×8mm
620	XEBSD26P08000	J	AA	Screw,ø2.6×8mm
621	XJBSF30P08000	J	AA	Screw,ø3×8mm

ACCESSORIES/PACKING PARTS

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
⚠1	QACCB0012AW00	J		AC Power Supply Cord [For U.K./Hong Kong]
⚠1	QACCE0007AW00	J	AH	AC Power Supply Cord [Except for U.K./Hong Kong]
2	QANTL0008AWZZ	J	AH	AM Loop Antenna
3	SPAKA0242AWZZ	J		Packing Add.,Left/Right
4	SPAKC0896AWZZ	J		Packing Case [Except for U.K.]
4	SPAKC0982AWZZ	J	AR	Packing Case [For U.K.]
5	SPAKP0013AWZZ1	J	AC	Polyethylene Bag,Unit
6	SPAKZ0573AWZZ	J		Sheet,CD Tray
7	TGAN-3170UMZZ	J	AE	Resistration Card [For U.K. Only]
8	TINSE0310AWZZ	J	AG	Operation Manual [For U.K.]
8	TINSZ0553AWZZ	J	AP	Operation Manual [Except for U.K.]
9	TINSE0314AWZZ	J	AB	Quick Guide [For U.K. Only]
10	TLABE0375AWZZ	J		Label,Bar Code [For U.K.]
10	TLABE0425AWZZ	J		Label,Bar Code [Except for U.K.]
11	TLABZ0604AWZZ	J	AB	Label,Energy
12	TLABZ0605AWZZ	J	AB	Label,Saving Energy
13	TLABZ0786AWZZ	J		Label,Feature,Tape 1 [Except for U.K.]
13	TLABZ0788AWZZ	J		Label,Feature,Tape 1 [For U.K.]
14	TLABZ0787AWZZ	J		Label,Feature,Tape 2
15	92LBAG1460C1	J	AB	Polyethylene Bag,Accessories
16	92LBAG1770A	J	AB	Polyethylene Bag,AC Power Supply Cord [For U.K. Only]
17	92LFANT1535A	J	AF	FM Antenna
18	RRMCG0229AWSA	J	AR	Remote Control
	GFTAB1022AWSB	J	AK	Battery Lid,Remote Control

P.W.B. ASSEMBLY (Not Replacement Item)

PWB-A1~3	92LPWB3327MANS	J	—	Main/Display/Headphones (Combined Ass'y)
PWB-B	92LPWB3303CDUS	J	—	CD Servo
PWB-C	QPWBF0027AWZZ	J	AD	CD Motor (PWB Only)
PWB-D	————		—	Tape Mechanism
PWB-E	92LPC99C017	J	AE	CD Loading Motor (PWB Only)

OTHER SERVICE PART

	UDSKA0004AFZZ	J	AZ	CD Pickup Lens Cleaner

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SPEAKER BOX PARTS

901	92LJ1911B	J	AU	Net Frame Ass'y
902	92L9557-1	J		Speaker Box Ass'y
903	92LJ9797C	J	AE	Port Cushion
904	92LP5879-1	J		Label,Specifications
905	92LF1377A	J	AC	Screw,ø3.5×13mm
906	92LD4680C	J		Speaker Cord
907	92LJ1912B	J	AX	Duct Panel
SP1,2	VSP0010PBY38A	J	AU	Speaker

PACKING PARTS

1	92LN1885B	J	AG	Packing Add.,Speaker,Bottom
2	92LN1885T	J	AG	Packing Add.,Speaker,Top
3	92LV4974A	J	AC	Polyethylene Bag,Speaker

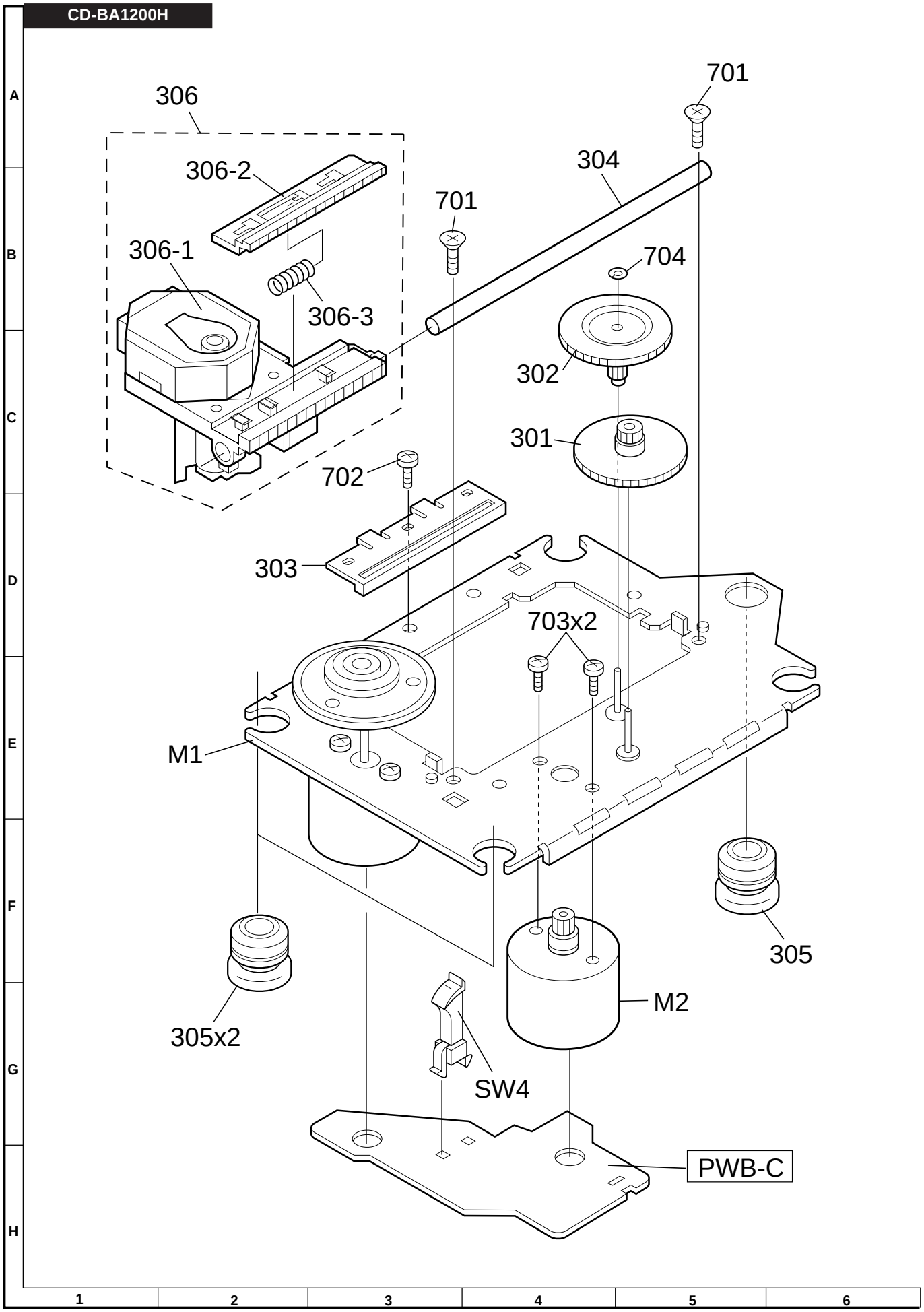

Figure 6 CD MECHANISM EXPLODED VIEW

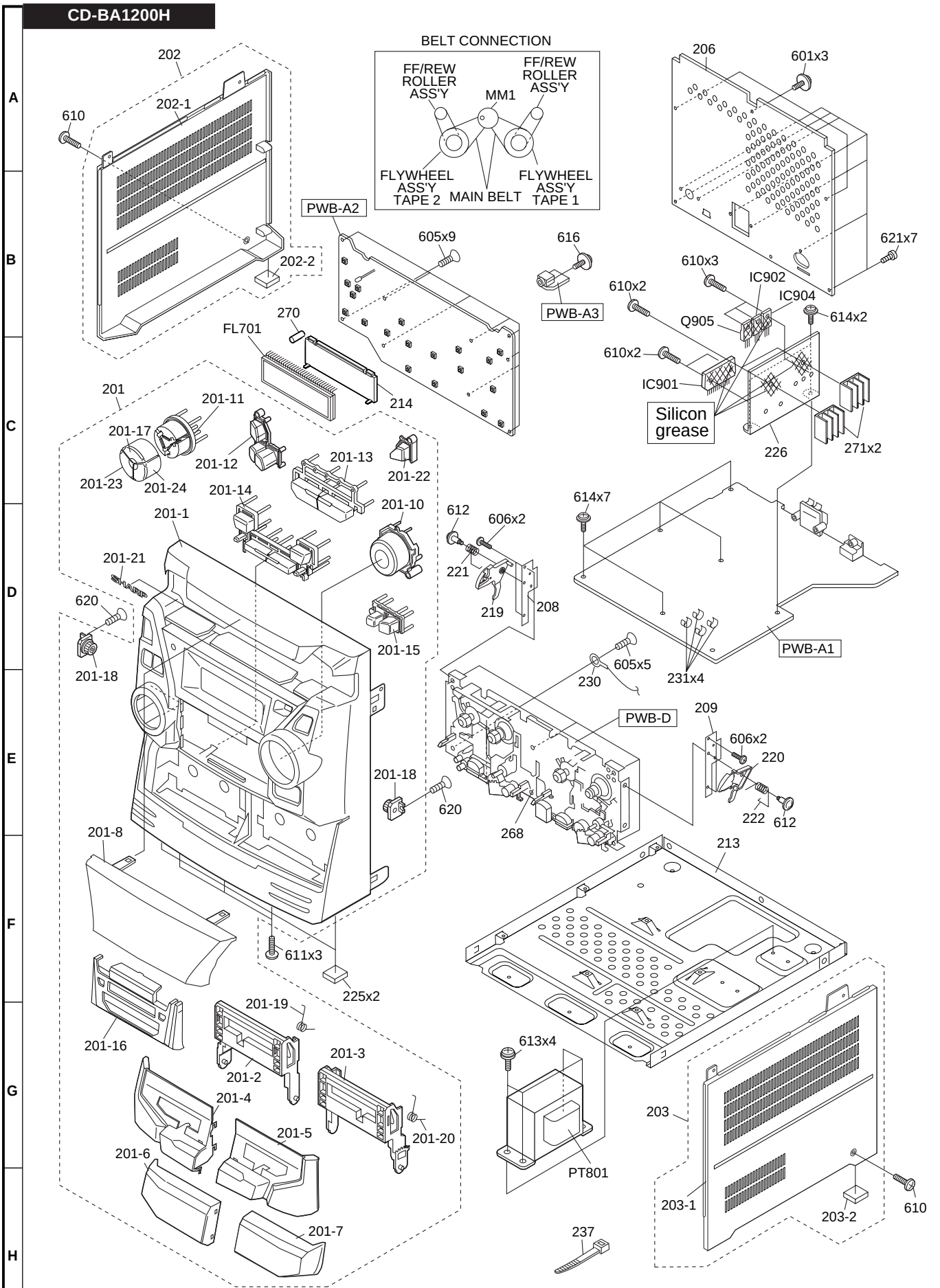

Figure 7 CABINET EXPLODED VIEW (1/2)

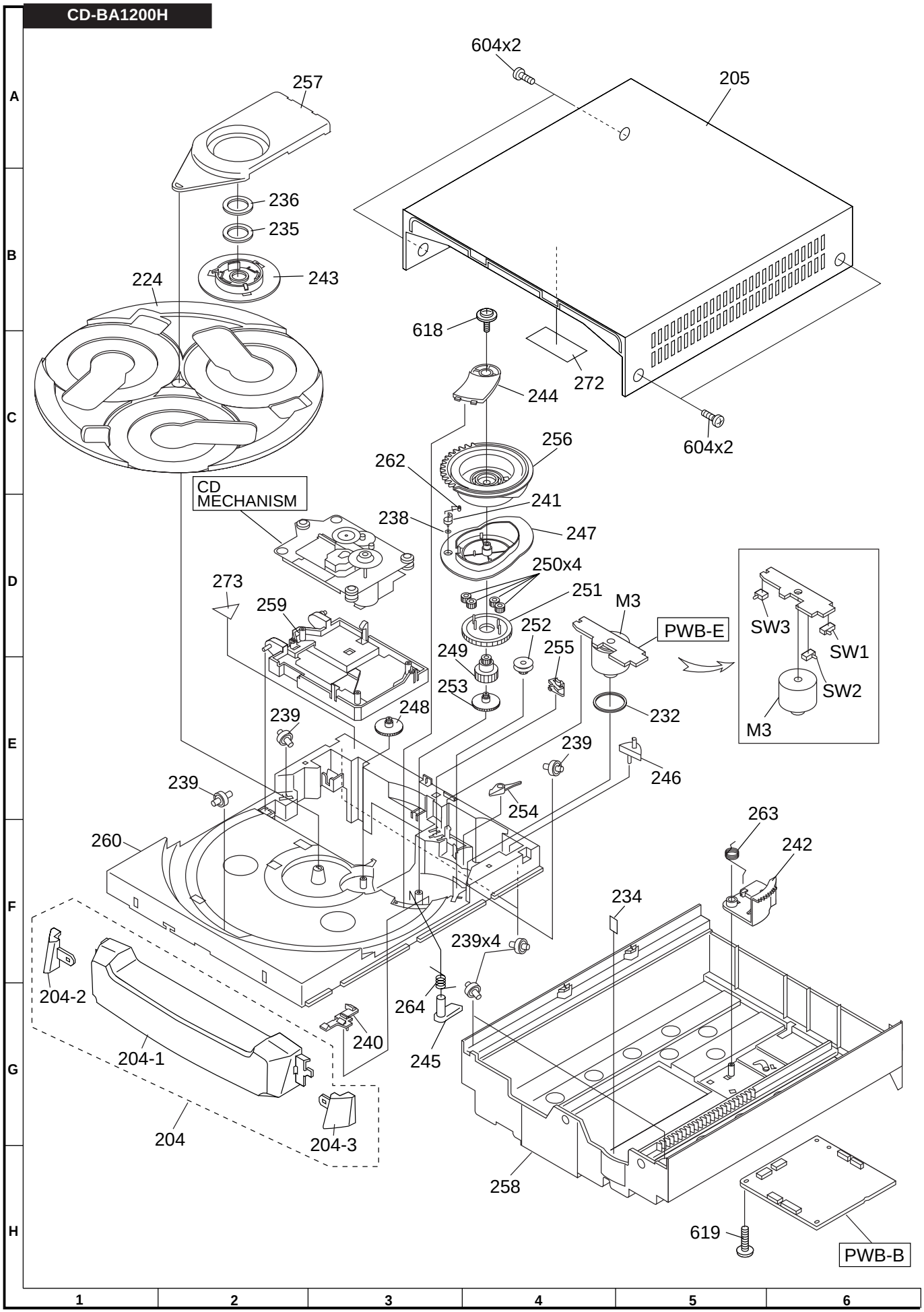

Figure 8 CABINET EXPLODED VIEW (2/2)

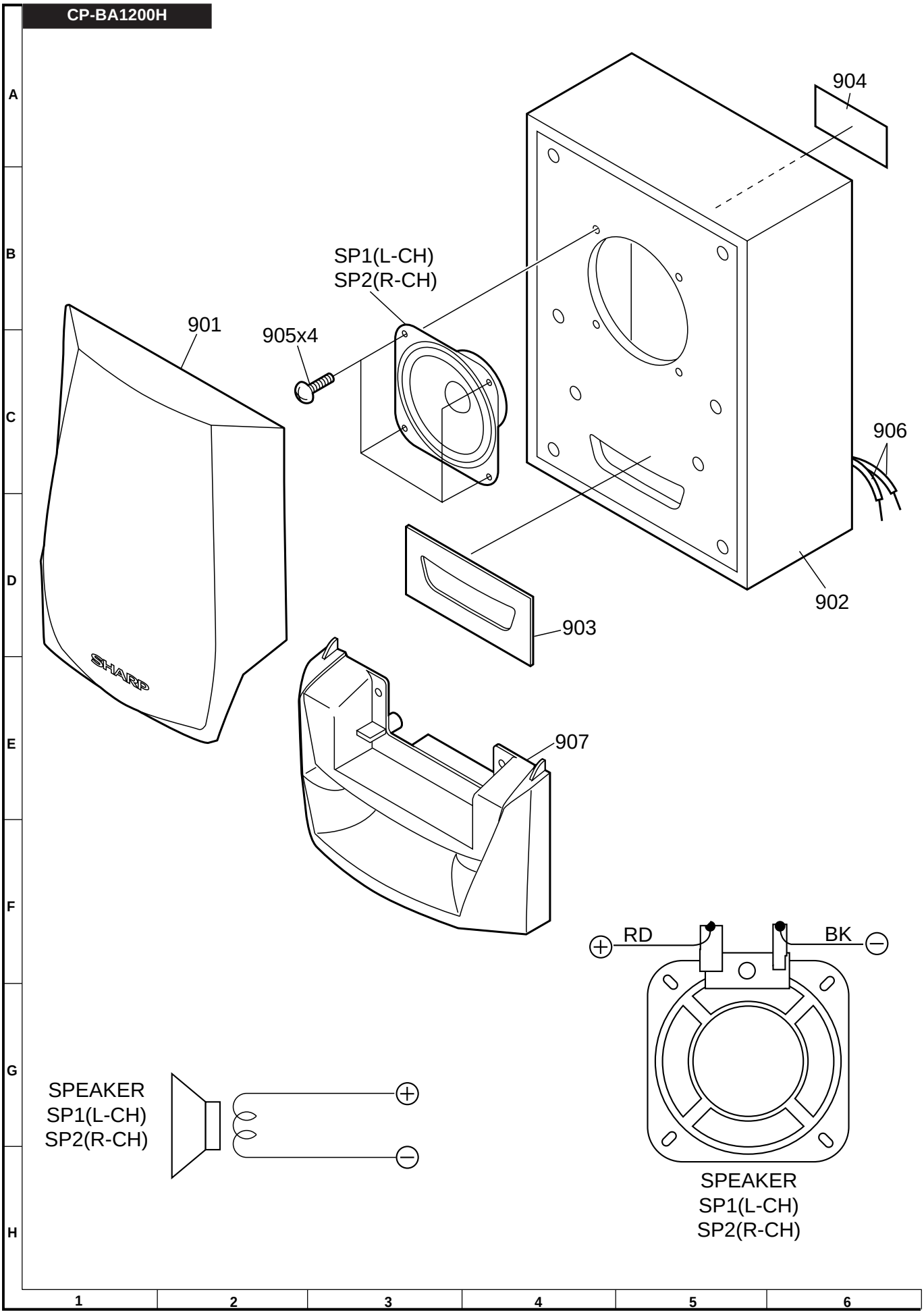

Figure 9 SPEAKER EXPLODED VIEW

PACKING METHOD (FOR U.K. ONLY)

Setting position of switches and knobs	
Tape Mechanism	STOP

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1. AC Power Supply Cord	QACCB0012AW00
2. AM Loop Antenna	QANTL0008AWZZ
3. Packing Add., Left/Right	SPAKA0242AWZZ
4. Packing Case	SPAKC0982AWZZ
5. Polyethylene Bag, Unit	SPAKP0013AWZZ1
6. Sheet, CD Tray	SPAKZ0573AWZZ
7. Resistration Card	TGAN-3170UMZZ
8. Operation Manual	TiNSE0310AWZZ
9. Quick Guide	TiNSE0314AWZZ
10. Label, Bar Code	TLABE0375AWZZ
11. Label, Energy	TLABZ0604AWZZ
12. Label, Saving Energy	TLABZ0605AWZZ
13. Label, Feature, Tape 1	TLABZ0788AWZZ
14. Label, Feature, Tape 2	TLABZ0787AWZZ
15. Polyethylene Bag, Accessories	92LBAG1460C1
16. Polyethylene Bag, AC Power Supply Cord	92LBAG1770A
17. FM Antenna	92LFANT1535A
18. Remote Control	RRMCG0229AWSA

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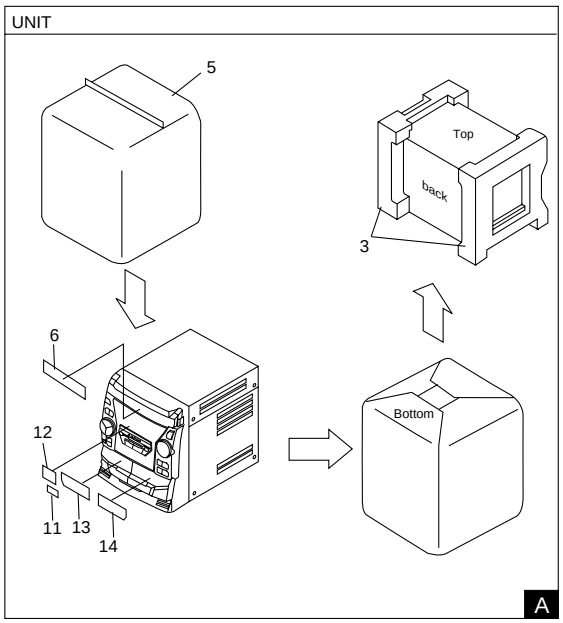
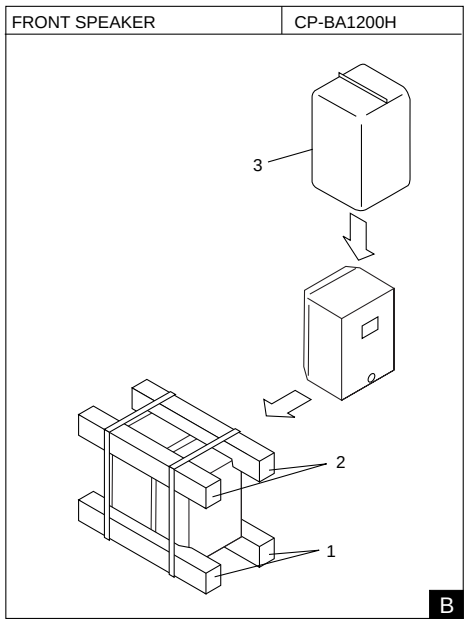
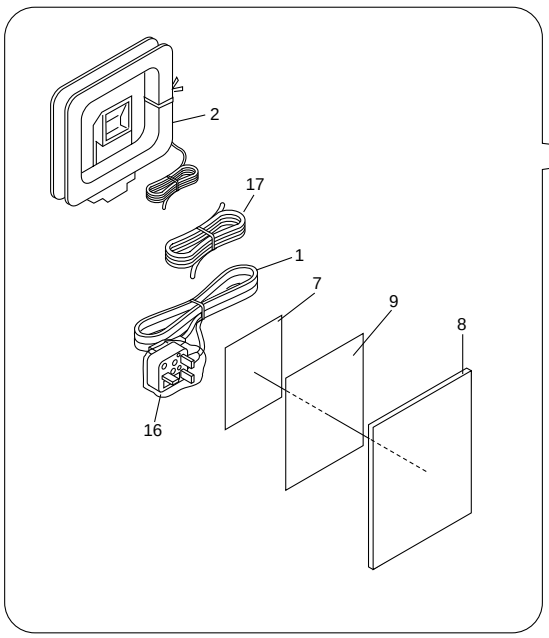
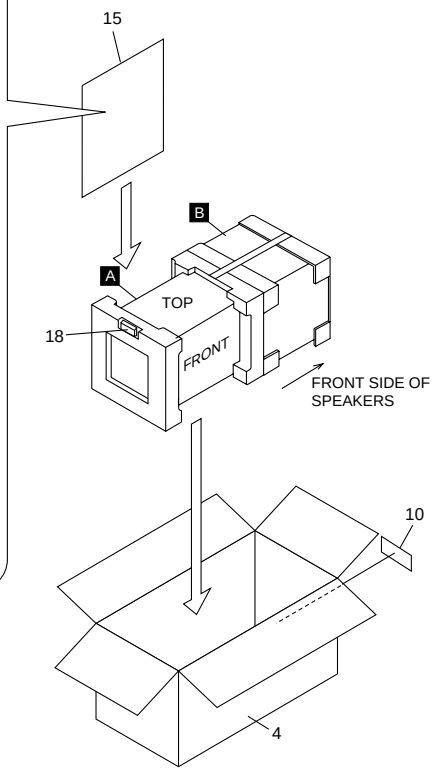
1. Packing Add., Speaker, Bottom	92LN1885B
2. Packing Add., Speaker, Top	92LN1885T
3. Polyethylene Bag, Speaker	92LV4974A









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